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Society, economy and communities, 'people not just paper' to ensure 21st century innovations in doctoral education : An editorial introduction

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The University of Newcastle

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The 12th biennial Quality in Postgraduate Research (QPR) conference once again highlighted the complex landscape of doctoral education. This year's theme, 'Society, Economy & Communities: 21st Century Innovation in Doctoral Education', reflects the socially contingent nature of doctoral education including the role of agency in determining the research candidate's experience and also the structural and cultural factors impinging on that experience. The keynote addresses and the papers presented at the conference showed in a variety of ways the importance of taking a broad societal approach including both communities and economic factors when exploring the value of the doctorate and in developing appropriate models of doctoral study and researcher education. To paraphrase our keynote Professor Helen Marsh, we need to make 'people not just paper' central to the doctoral enterprise.

In his keynote, Professor James Arvanitakis unpacked the tensions between what is said about doctoral education and what students actually experience. For example, although we speak of the importance of collaboration between researchers and increased links with industry, many doctoral candidates still experience their studies as an 'isolating individual experience' with little or no contact with industry. To ensure we are 'better at shaping and explaining what we do', Arvanitakis (2016) suggests that we develop holistic systems for doctoral education that embed 'creativity, resilience, design thinking and working across teams' in the 'doctoral journey'. To ensure this occurs, Arvanitakis suggests a carefully scaffolded journey that includes the development of career planning, knowledge translation; supervisor development; and multiple feedback mechanisms for research candidates and supervisors. He noted that we should not reify the postgraduate process', rather, we should 'contextualize it into the contemporary world' along with 'maintaining standards despite the pressures'.

Drawing from insights gained from here experience as Vice-Chair of the group that produced the Australian Council of Learned Academies' (ACOLA) report on research education, Professor Helen Marsh emphasized that to achieve relevant 'contextualized' doctoral education for the 21st century, three important components need to be addressed: '*the person*: HDR [education] produces high quality researchers capable of succeeding in different sectors'; '*the nation*: HDR [education] contributes to Australia's future prosperity and wellbeing'; and '*the system*: HDR education is 'structured in a way to achieve the above'. Although Helen placed 'people' at the center, she provided a number of practical examples of how all three components could be addressed. For example, to contribute to the nation's economy and industry, Helen recommended that individual HDR candidates in Australia should be engaged in an effective system of internships based on the Canadian (Mitacs) system. For this system to work, people in the form of engaged academics, industry collaborators and candidates are needed. The collaboration should also be carefully structured with a clear proposal including defined outcomes that is validated by a referee. There should be a set timeline (e.g. 6 weeks) and a clearly defined budget (e.g. \$C15,000) that is affordable for most small to medium enterprises. In addition, the internship should be carefully monitored to ensure outcomes are achieved and students are not exploited. Helen indicated that this system resulted in excellent outcomes for the university, the student and the community with 92% of industry-partners valuing the program. However, for effective initiatives like this to occur, she noted that accurate data is required since it is currently impossible to gauge the return on government investment in doctoral education. She therefore strongly recommended that Australia should follow the example of New Zealand and engage in longitudinal studies on HDR graduate outcomes.

The Quality in Postgraduate Research conference is unique in terms of its breadth of interest, its global reach, and most importantly for the mix of delegates who attend. The refereed papers included in these proceedings along with the extended abstracts and conference abstracts reflect this diversity although all emphasize doctoral education in relation to one or other aspect of people, nation and system as suggested by Marsh. Nigel Palmer in his paper on quality (assurance) in doctoral education explained how tensions can arise between what people (research candidates and supervisors) expect from doctoral education, the systems and 'tools' available and the nation as represented by 'external policy and funding priorities'. In order to reconcile these competing components, Palmer suggests that better quality indicators should be developed that take the complexity of the context into consideration. Several of the papers critique the privileging of one component of doctoral education over the other. For example, Wendy Bastalich draws on theory in the fields of economics, business, higher education and sociology to critique the reification of 'innovation' and its benefit to the nation over other aspects of doctoral education. In their paper, Pam Bartholomaeus and Khambane Pasanchay critique limited notions of the system of doctoral education by showing how our view of doctoral networks is limited if we do not also pay attention to the family and community networks of doctoral candidates. Barbara Bolt and her colleagues also critique a simplistic view of systems in doctoral education, highlighting that even taken-for-granted issues such as research ethics need to be reexamined within the context of specific disciplinary and professional communities.

New and evolving doctoral supervision systems and practices were a prominent theme in the conference and refereed papers. For example, Lesley Henderson et al. describe the benefits of a collaborative model of supervision in enhancing supervision practice and community, Helen Partridge et al. show the benefits of this model in a trans-pacific context. Other papers focus on making doctoral supervision an integral part of the research environment. For example, Marc Torca speaks of making research candidates part of the 'everyday research of supervisors in order to build productive working alliances rather than hoarding them in isolated offices and organizations for doctoral education' while Juhani Tuovinen, Selva Abraham and John Sweller explore how 'synergies between research programs and postgraduate research degree programs' can enhance both the experiences of research candidates and the research agendas of their supervisors. Ria Vosloo and Shireen Motala emphasize that effective doctoral education needs to be broader than merely the individual student and supervisors and describe the value of 'the Other in the supervisory relationship'. Including support and other external people in the supervisory system does, however, require an effective postgraduate support and development framework as highlighted by Kevin Petrie et al. in their paper. Like their students, doctoral supervisors and administrators also require networks within which to hone their practice. Emmie Smit and Henrietta van den Berg show how the development of the Postgraduate Forum for Southern Africa (PGFSA) has begun to enhance doctoral education in the South African context.

Despite all the developments around the issue of employability and innovation, virtually all research candidates continue to be required to produce a written document that represents their body of work and their contribution to the discipline or disciplines in which they are working. Ron Adams and Natasha Ayers reflect on how doctoral writers can enhance the readability of their work, while Wendy Bastalich unpacks the issue of subjectivity in doctoral writing, and Carolyn Gregoric and Amanda Muller explore the individual needs of international students with English as an additional background and demonstrates within a communication program.

In the final refereed paper of the proceedings, Fiona Zammit and Max King explore how institutions can ensure that 'people not just paper' are central to the doctoral enterprise. They note that even when working in data-driven environments such as institutional audits, it is vital to involve the people by selecting measures of quality that are informed by people at all levels of the research community and are easily assessable to all the people involved.

Since its inception in 1994, the Quality in Postgraduate Research conference has sought to bring together all parties involved in postgraduate research education to enhance the quality of research degrees and the research degree experience. We hope that these proceedings will inspire all involved to continue to innovate and develop our practice and will encourage readers to come along to and participate in future QPR conferences.

KEY1

Professor James Arvanitakis

Dean, Graduate Research School -
Western Sydney University



Worth the paper it's written on? Reframing the contemporary PhD

Professor James Arvanitakis is the Dean of the Graduate Research School and founding Head of the Academy at the Western Sydney University and a member of the University's Institute for Culture and Society. A regular media commentator, in 2012 James was named the Prime Minister's University Teacher of the Year. Awarded a prestigious Australian Discovery Grant in 2013 to research Australia's changing citizenship, in 2015 he was named an Eminent Researcher by the Australian Indian Education Council.

The PhD, once seen as the pinnacle in academic achievement, was developed in Germany in the 1880s. Some 150 years later, the broad model of the PhD has not significantly changed: it is often reliant on the 'lone' researcher working on a single project for three years and producing 'new knowledge' at the end of the process. While some students thrive in this environment, it is not only a false image of how knowledge is developed it also fails to prepare students for the realities and challenges of our contemporary society. Furthermore, the model fails to consider the 50 percent of higher degree research candidates who do not pursue an academic career. This presentation discusses both the need to reframe the PhD as well as presenting a case study on how to confront the changing career demands of higher degree research students.

KEY2

Professor Helene Marsh

Distinguished Professor of Environmental Science and Dean, Graduate Research at James Cook University



An Australian doctorate for the 21st century; insights from the ACOLA review process

Helene Marsh FAA, FTSE is Dean, Graduate Research and Distinguished Professor of Environmental Science at James Cook University. Helene was Deputy Co-chair of the Expert Working Group that conducted the recent ACOLA Review of Research Training in Australia. Helene is Australia's longest serving Graduate Dean and has served two terms as convener of the Australian Council of Dean and Directors of Graduate Studies. She has served on the advisory committees of 55 completed PhD and 20 Masters candidates.

In May 2015, the Australian Council of Learned Academies (ACOLA) was commissioned by the then Minister of Education to conduct a comprehensive review of Higher Degree by Research (HDR) training in Australia, in close cooperation with the parallel Watt Review of Research Policy and Funding. The ACOLA Review consulted extensively with stakeholders in the higher education, government, non-profit and private sectors and analyzed literature and program materials that elucidated international and national best practices. The ACOLA Review Process found that the Australian system of HDR training is well-respected from an academic perspective, but needs to further develop its entry pathways, supervisory practices and industry engagement to maximize its social, economic and environmental benefits. The sector will need to deliver the required improvements in collaboration with key government and industry stakeholders. Time and policy stability are required to develop the necessary reform initiatives and garner the evidence-base to assess their outcomes.

W03 Cohort, college and collaboration: Contemporary changes in structure, policy and practice within UK doctoral education training: Using cohorts to improve recruitment, retention and connectedness of HDR students

Rebekah Smith McGloin

Coventry University

This paper explores recent changes within doctoral education in the UK. It draws on key findings from a national report 'Structural Changes in Doctoral Education in the UK - A Review of Graduate Schools and the Development of Doctoral Colleges' (UK Council for Graduate Education, 2015) by the paper's author and an in-depth case study of the Doctoral Training Alliance (DTA), which is a ground-breaking nationwide collaboration across 13 business-facing, modern UK universities - to give an overview and an insight into the changing nature of the UK doctoral landscape. It gives a summary of the drivers for and characteristics of a so-called 'quiet revolution' (EUA, 2013) in doctoral education in the context of common global challenges. These include: retaining international competitiveness, driving growth in student numbers, managing costs effectively, enhancing the quality of research training and further exploiting the value of doctoral communities to national and the global economy. The paper then uses a review of UK/European policy and practice, summer 2015 national survey data (from 84% of UK universities) and qualitative interviews with DTA research students, supervisors, managers and administrators to examine in detail a number of recent trends in UK doctoral education. These are: the growth in cohort-based programs; the rise of Doctoral Colleges; diversification in programs; and large-scale cross-institutional and cross-sectorial national and international partnership-working.

References

European University Association (2013) Progress report on the implementation of the actions agreed in the Memorandum of Understanding on the European Research Area, p. 4.

Keywords

UK structural changes; cohort-based programmes; doctoral training partnerships; nationwide training consortium; international collaborations

W04 Greater than the sum of its parts: Collaboration in doctoral projects

Sioux Mckenna, Chrissie Boughey

Rhodes University

This presentation draws on insights from 14 PhD candidates to consider ways in which teams of doctoral scholars work together on a broad problem drawing on a shared theoretical framework. This model is common in the Natural Sciences, but the Humanities and Social Sciences have long privileged the notion of doctoral education as an individual journey. The result

of this history means that doctoral projects in which multiple scholars grapple with a social problem is often met with some scepticism. However, in the context of criticisms that much research in the Humanities and Social Sciences is small scale and fails to attend to large-scale issues, collaboration amongst PhD scholars has the potential to provide cumulative findings. Furthermore, doctoral education in the Humanities and Social Sciences suffers from low retention and high dropout and this study argues that forging collaborative project teams are one way to reduce this. Despite concerns that collaborations reduce the extent of individual autonomy, this presentation argues that provided the project design is sufficiently flexible, greater conceptual depth can be fostered through collaborative teams than is possible through individualistic approaches. Through an analysis of two PhD projects in the field of Higher Education Studies, one that looks at Social Inclusion and one that tackles Institutional Differentiation, this presentation concludes that this approach results in the whole being greater than sum of its parts.

Keywords

doctoral programmes; project teams; collaborative research; team supervision

W05 Doctoral experience and *researcher* development in different PhD workspaces

Lilia Mantai, Robyn Dowling

Macquarie University

In the rich vein of emerging research on doctoral learning and researcher development, an understanding of space is comparatively absent. Yet both learning and development occur in and through space: the materiality of spaces such as the lab as well as the imaginings and social aspects of spaces have affordances that facilitate the PhD. Our purpose in this paper is to explore the form and function of these spaces, based on a qualitative study of PhD experiences, specifically narratives of 30 PhD students at two Australian metropolitan universities, and focus groups with 34 students. Students are actively making use of diverse workspaces to improve their progress and study experience. In this context we identify four spaces important to doctoral learning and researcher development: university campus, laboratory/office, home, and virtual/ online spaces. More importantly, we illustrate the doctoral practices and researcher identities that occur within, and are constituted through, each of these spaces. These include making connections with various others to prevent social isolation, researcher professionalization, space of respite. This research suggests the need to re-conceptualize PhD work within the dynamic and fluid landscape created by the various workspaces across which doctoral practices are distributed.

Keywords

doctoral practice; PhD students; workspace; researcher development; PhD experience

W07 Using research writing as a means to developing international capacity post-PhD

Monica Behrend

University of South Australia

The literature on the internationalization of doctoral research highlights ways in which the experience of doctoral scholars has become more multicultural and multinational over time. Less well-known, however, are the ways in which the experiences of internationalization have benefitted doctoral students post-PhD and assisted them in establishing their early careers. Many international doctoral students return post-PhD to lecturer and research at their previous university workplace. This paper examines how ongoing international experiences and collaboration can foster the creation of new work identities for such international students post-PhD. Drawing on the experiences of collaborating with post-PhD scholars on research writing workshops for their fellow academicians, this paper identifies opportunities for ongoing potential professional development provided by these scholars. These opportunities not only highlight way in which these scholars have changed through doing their PhD but also support their newly-constructed identities as early career researchers.

Keywords

internationalization; researcher identities

W08 At Cross-Purposes: Doctoral Candidates, Policy and Practice?

Lisa Looney

Dublin City University

Claire Jackson

University of Strathclyde

There has been a well-documented shift in policy and practice in respect of doctoral education within the European Union, which is mirrored globally. Much of the change has been driven by an agenda related to strengthening knowledge economies and sustaining or increasing competitiveness (EC, 2010), rather than any candidate-led agenda. Building on the work of Guerin et al (2015), two universities in Ireland and Scotland undertook a parallel study to examine the motivations of incoming research degree candidates, and their career expectations. The aims were:

- to examine the degree to which candidate motivation aligns with research graduate outcomes and career focus as expressed in national and EU policy, and
- to inform the design of doctoral program curricula and career development support.

299 responses to a survey of research candidates at the very beginning of their programs are analyzed in the context of discipline and previous work experience, as well as gender, age, status as an international student and institutional affiliation. Results indicate that there is a degree of misalignment between candidate aims, and those of the agencies funding them

(fully or partially), and a lack of discipline and sector nuance in the policy positions. The insights gained significantly enrich understanding of the starting point of candidates, and in turn inform approaches to the evaluation of doctoral curricula, and the expectations set in policy.

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Guerin, C., Jayatilaka, A. & Ranasinghe, D., (2015), Higher Education Research and Development, vol 34, no 1, 89-104.

Keywords

doctoral candidate motivation; doctoral education policy; career focus of doctoral candidates

W09 A different agenda for doctoral supervision: Changing the institutional conversation

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Stellenbosch University

The traditional construction of supervision as 'research' rather than 'teaching' is often reflected in the organizational positioning of the responsibility for supervisory development. While universities typically have an institutional unit dedicated to supporting undergraduate teaching and learning, this is seldom the case for postgraduate studies. Even in the context of a growing scholarship on postgraduate pedagogy and supervisory practices, there appear to be few institutional mechanisms and structures that support this position. In this paper we argue that strengthening postgraduate supervision is as much a matter of organizational development as it is of supporting the individual, and that this will require institution-wide shifts in thinking about how to facilitate postgraduate work. We provide a critical reflection on a program aimed at enhancing the practice of supervision, that also had the explicit intention of setting an institutional agenda around the facilitation of postgraduate studies. From the outset we were not simply interested in 'delivering' the course, but rather in starting a conversation about supervision at the institution. We imagined that those who had been on the course, would be able to contribute in some way to creating or facilitating small groups of reflective practitioners in their individual contexts. We will report on the process that was followed. Drawing on the experiences of the participants, we will consider the broader institutional issues that influence activity at this level. In closing, we will explore the potential for such interventions to challenge the thinking about supervision and, building on the work of Kotter (1995) and Trowler et al (2005), offer some initial insights with regard to bringing about change in higher education contexts.

Keywords

supervision pedagogy, institutional agenda

W11 The becoming of the students' own voice: A dialogic perspective on students' responses to supervisors' written feedback

Linlin Xu

The University of Auckland

Feedback is important but problematic in teaching and learning. The existing literature tends to focus on feedback given to undergraduate students; only a few studies address feedback at doctoral level and very few consider an intercultural supervision context. This study bridges this gap by researching from Bakhtin's dialogic perspective the supervisors' written feedback and, the students' corresponding responses as well as underlying rationales. Data were collected in two stages from six Chinese international doctoral students and their non-Chinese supervisors in a research university in New Zealand. Text analysis on supervisors' written feedback and the students' responses revealed: 1) descriptive frameworks of feedback foci (aspects of writing the feedback addresses) and formulations (how the feedback is formulated linguistically); 2) types of change the students made in revision upon the feedback; 3) the prevalence patterns of the students' responses to different feedback foci with different formulations. Three rounds of semi-structured interviews with these six students were conducted afterwards. The interview aimed to unveil the rationales behind the students' responses and to reconstruct the basic conditions of the becoming of their voice. This study argues that feedback practice is dialogic; that the students respond to the feedback, develop their own voice, through making dialogues with different 'others'. The 'others' or interlocutors are, for instance, the supervisors, the Chinese tradition of obedience and institutional regulation of word limit, and are confined by feedback focus and formulation. These dialogues are conducted between cultures, between time and space, and these elements are intertwined and function holistically.

Keywords

dialogic; intercultural doctoral supervision; students' responses; supervisor written feedback

W12 Topic Delineation: The role of structure, culture and agency

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The University of Adelaide

Lalitha Velautham

National University of Singapore

PhD topic delineation is often conceived of or described as an intensely individual process where the PhD candidate has sole power over their project. However, increasingly, a student's topics are subsumed by the work of a research group, grant or even institute with the student's individual agency constrained by these forces. When describing her theory of 'morphogenesis' Margaret Archer distinguishes between 'primary actors' who 'literally have no say', can 'play no part in the strategic guidance of society' and who merely reproduce pre-existing

structures (Archer 2000a:268) and 'corporate actors' who through their resources, their negotiations, pressures, and bargaining power strategically transform structures (Archer 2000a:268–69). However, corporate actors usually achieve these transformations when not confined to the 'Me' and instead, as collective actors, they 'become part of an active 'We' that transforms structures and achieves social change—or social 'elaboration'. Although the PhD candidate will never entirely be a 'primary agent', with the changing nature of the PhD it is useful at this stage to explore the limits of their corporate agency and the roles of 'Me' and 'We' and how they are constrained by institutional structures. In this study, using Critical Discourse Analysis, we unpack the narratives of 10 research students and trace how 'structure', 'culture' and 'agency' (Archer, 1995) play out in their perceptions of how the topic delineation process plays out over a three-month period early in candidature. We show that certain disciplines have strong structural and cultural elements that constrain individual and even group agency, while in other cases, the agency of the supervisor constrains the student taking individual responsibility. We note however that in most cases, even within strong structural constraints, the student develops a sense of ownership of the project and 'social elaboration' occurs.

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Keywords

topic delineation, negotiation

W14 Issues facing research postgraduates from the perspective of an independent advocacy service

Janice Boey, Jessica Van Gent

Monash Postgraduate Association

The Monash Postgraduate Association (MPA) is recognized by University Council as the independent representative body for all coursework and research postgraduate students across all Victorian campuses of Monash University. One of the key services offered by the MPA is the provision of confidential advice and advocacy to all postgraduates. Each year, the

MPA staff see increasing numbers of students with over 600 individual cases reported in 2015. Of those, approximately one third is comprised of higher degree by research students. The objective of this paper is twofold. Firstly, by analyzing advocacy casework data from the last five years, we can provide an insight into the types of issues facing research postgraduates. Secondly, we can provide a unique perspective on the way in which postgraduate issues are handled and resolved (or not) across the different faculties. This study does not detail every postgraduate experience at Monash University. However, it serves to highlight some of the issues faced by research students, and puts forward a different perspective to the broader discussion of quality in postgraduate research.

Keywords

advocacy; student experience; higher degree by research

W15 Enabling student leadership beyond the bench: An internship program for science education

Keely Bumsted O'Brien, Stephanie Conos

Walter and Eliza Hall Institute

Caroline Owen

Peter McCullum Cancer Centre

Biomedical PhD education must meet research-training requirements and prepare students for diverse employment opportunities. Simply relying on passive skill acquisition is not sufficient in the current career climate. The scientific education office at the Walter and Eliza Hall Institute of Medical Research established an internship to provide practical experience in tertiary education for mid-stage PhD students. The internship was designed with flexibility to maintain the PhD as the intern's first priority, whilst enabling them to gain knowledge and acquire new skills. Interns are provided a mentor, on-the-job training and opportunities to attend international meetings. During 2014/15 an inaugural intern worked on two projects (1) a formal student-mentoring program and (2) a series of transferable skills-based workshops. The intern designed and implemented a peer-peer and postdoc-student mentoring program (1). Challenges included identifying a pairing system and developing resources for mentor/mentee training. Formal feedback was overwhelmingly positive, and the program will continue with few changes. With the skills-based workshops (2), the intern assisted two senior academics to deliver a series of workshops on transferable skills across two medical research institutes. Challenges included scheduling events, building appropriate content and managing senior members of staff. Feedback indicated workshops were well received and attended. The intern acquired real-world skills that will greatly assist in any future career. This internship formed the basis of a successful HEA associate fellowship of higher education application and demonstrated that motivated PhD students can work outside their field of research, drive their own career trajectories, and improve the student experience.

Keywords

upskilling; enabling student potential; transferrable skills; internship

W16 'My student' doesn't need to do that!!! Exploring the complexities of research supervisor buy-in

Julia Connell, Nicky Solomon

University of Technology Sydney

Much has been written about research supervisor/student training and development. To date, however, there has been less attention paid to the need for research supervisor 'buy-in' to encourage students to attend research development workshops. The 'formalisation' of research training within most universities has included an increasing emphasis on the development of the person as a researcher and preparation for their 'life beyond the thesis'. This focus may not be shared by supervisors, whose focus tends to be on the research study, the pressure for doctoral students to complete their studies 'in a timely manner' and their role as supervisors. Bowden and Green (2012) point out that such pressure can lead to 'completion mindsets' concerning the final quality of doctoral dissertations and the nature of research supervision. In addition to completions, research supervisors are also encouraged to help their students publish and develop a range of graduate attributes to assist their eventual employment. These factors place enormous pressure on supervisors and can result in a 'juggling act' concerning the need to determine the value of research workshops versus targeted thesis completion – hence the need to engage supervisor 'buy-in' for researcher development.

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Keywords

doctoral student; researcher development; research supervisor

W17 We're getting engaged! Developing stronger relationships with HDR administrators for better management of research degrees

Dominic Mooney, Claire McCarthy

University of New South Wales

The UNSW Graduate Research School (GRS) has a direct engagement model with faculties and schools when it comes to managing our 4000 plus active HDR candidate cohort. After several years of maintaining strong relationships with our faculty Associate Deans of Research Training and school Postgraduate Coordinators (PGCs), we are now looking to ramp up the engagement with our community of faculty and school administrators. This is important as administrators often set the tone for the school's relationship with the wider University community and are an important conduit between central administration and the HDR candidates. This paper will describe how we have traditionally engaged with these influential stakeholders and what initiatives we have taken to develop that relationship. It will also outline what the GRS learned

in return about the issues faced on the frontline of research administration. We will explore models of interaction that will be relevant to research administrators in Graduate Schools, and academic and professional staff in schools and faculties alike. We'll share with attendees the successes and the challenges we have faced as we move towards integrating our efforts to provide a higher level of service to the HDR community across our three campuses and where we will go to from here.

Keywords

Stakeholder engagement; research administration; HDR management; knowledge exchange

W18 University of Canberra's research admissions system

Anushya Kumar

University of Canberra

This paper introduces an online workflow system that the University of Canberra (UC) is looking to develop to manage HDR admissions called the Research Admissions System (RAS). With the University's intent on increasing quality HDR student numbers, the admissions process will need to provide a quick turnaround of applications and keep the applicant informed and engaged throughout the process. RAS as an integrated solution will replace the current paper-based process and will have the key features:

- An initial Pre-assessment and Expression-of-Interest workflow.
- Integrate with existing systems – Callista Applicant portal and Callista management system.
- Reporting function – the system will generate Faculty-based reports for past and current applicants.
- Dashboard to display application information in a concise, user-friendly manner.
- Workflow to assess and process application for both administrators and academics.
- Engage with applicant – notify the stage the application is at.
- Archive historical data.

It is expected that RAS will provide

1. Faster turnaround of academic assessment of HDR applications.
2. Improved identification and alignment of the applicant's research area to UC's research portfolio to increase offers made to quality applicants.
3. Ease of access of the application from anywhere in the world.
4. Increased transparency and improved quality assurance.
5. Greater monitoring of time taken at each stage on the application assessment.
6. Greater adherence to HDR admissions policy.
7. A self-service for applicants to track their application.
8. Multi-level, multi-stakeholder involvement.

This paper aims to discuss the functionalities of RAS and explore the journey of the concept design and development to date.

Keywords

Higher Degree by Research; Admissions; Online Admissions System

W19 Professional degrees: Strategies to increase completion times

Liezel Massyn

University of the Free State

The effectiveness of the traditional one-to-one supervision model is questioned in the literature (Harrison & Grant 2015). In the South African context, as is the case in many parts of the world, there is massive growth in postgraduate student numbers, but the same growth is not experienced in terms of supervisor capacity. This puts the traditional supervision model under increased pressure. Alternatives to the traditional model do not always alleviate the time pressure on the individual supervisor. In the context of professional degrees, students are not always on the same level in terms of research experience or academic knowledge. This escalates the pressure on individual supervisors to 'get students through the system'. In order to solve some of the problems in supporting students to complete the research projects, strategies were identified to support students, without putting additional pressure on individual supervisors as proposed in some groups or cohort supervision models. While a one-to-one supervision model is still preferred by supervisors and the management structure of the Business School, additional strategies were introduced to support students in an attempt to increase completion rates of research projects. This paper explores the strategies supporting the increase in completion of research projects in the specific programme.

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Harrison, S. & Grant, C. (2015). Exploring of new models of research pedagogy: time to let go of master-apprentice style supervision? *Teaching in Higher Education* 20(5):556-566.

Keywords

supervision models, strategies, completion times

W20 Widening Horizons: Preparing postgraduate research students for careers in academia and beyond

Rachel L Cowen, Elizabeth Wilkinson, Judith C Williams

The University of Manchester

In the last decade the number of PhD graduates in the UK has increased by 58%, whereas academic jobs have only risen 13%. Consequently, the majority of PhD graduates will go on to careers outside academia. Graduate schools and supervisors need to support students to complete their PhD

on time, prepare them as potential academic leaders but equally importantly prepare them for careers outside of Higher Education. Our aim was to develop an employability training program to widen postgraduate student's career horizons preparing them for a diverse range of careers. The employability program begins from the point of induction helping students develop career action plans. Within the program students' access workshops that include taking control of your career, getting ahead in academia and careers outside academia (96% rate good/excellent). Our award winning Academic Careers website receives 160,000 views annually. Dedicated coaches and careers consultants provide one-to-one CV, job/fellowship applications and interview support. Over the last 9 years our flagship careers event 'Pathways' has supported 3000+ students providing career-building contacts from a diverse range of career backgrounds. The event was shortlisted for a national Times Higher Award and has been modeled by other HEIs nationally. Despite this provision, only 7% of students report receiving adequate careers advice. We are investigating student expectations, the role of the supervisor in providing careers support and how supervisors can be supported to do this effectively. We are also extending the provision with the launch of a 'Your Future' Month for Early-Career Researchers.

Keywords

Employability; careers; student

W21 Designing the desirable in PhD skills training: A study of employer perceptions of UK researcher development

Claire Jackson

The University of Strathclyde

Since the emergence of the skills agenda in the Roberts' SET for Success Report (2002) and associated Research Councils UK (RCUK) funding, universities have been cyclically reviewing and renewing approaches to researcher development for well over a decade. The evolving goal has been centered on ways to 'embed' a gold standard in transferable skills training for doctoral students to maximize their potential and meet employer needs (Vitae, 2010). The Haynes Report (2010) was undertaken to ascertain the progress made in achieving this level of excellence in the area of researcher development. Nearly 100 universities in receipt of RCUK Roberts' funding formed part of the study, which specifically looked at the distance travelled between 2004 and 2009. The report concluded that the number of institutions providing 'extensive, structured transferable skills training' had increased from 12% in 2004 to 75% in 2009. Analysis also highlighted that comprehensive program reviews within universities had found that students responded more positively to less rigid approaches with an element of choice. From the report, three broad approaches to researcher development can be identified within UK universities - structured (compulsory, mandatory or prescribed curriculum),

semi-structured (framework(s) with an element of flexibility) and unstructured (entirely optional participation in provision). But where do the views of employers feature in informing program and/or training design? The Hodge Review (2010) reported that there had been 'very little systematic involvement of employers in planning the needs for skills development, or development of programs'. Policy-focused forums and debates in the sector revisit the issue of meaningful employer engagement in researcher development on a regular basis, yet there is little known about external perceptions of current practice. This research aims to better understand employer preferences in approaches taken to preparing doctoral graduates for the job market. Through the eyes of employers, the study will go some way to ascertain whether a structured, semi-structured or unstructured approach to training researchers in transferable skills is seen as more 'desiderata' (Hesketh, 2000) in the recruitment of doctoral graduates. In essence, what does a gold standard look like to the head-hunters recruiting our doctoral students?

It is hoped that the results of this qualitative-based study will help guide universities in determining how best to embed transferable skills training in research programs to truly maximum potential, in turn meeting the needs of employers and ultimately impact positively on doctoral employability.

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Keywords

research; skills; training; PhD; employability; employer engagement

W22 Transferable skills programs: Innovation versus entrepreneurship

Judith Ford

The University of South Australia

In contemporary research degree education, innovation and entrepreneurship are frequently discussed as transferable skills, for example OECD (2012) <http://www.oecd.org/science/transferableskills.htm> where they are collectively referred to as 'enterprise skills'. In early 2015 I was the recipient of an Australian Government-funded Endeavour Executive Fellowship (Jan – March, 2015) to study how a major Hong Kong university is developing entrepreneurial skills in their postgraduate students. As part of this I attended three independent courses in Entrepreneurship and conducted interviews with individual students about their projects and goals. I found (a) There is little overlap between students' desire to undertake a PhD and Entrepreneurship: nearly all chose either to undertake Masters degrees in Entrepreneurship or a PhD. (b) Students of Entrepreneurship, who were directed to work with academics to commercialize their Intellectual Property, had significant difficulty because of the academics' lack of understanding of, and unrealistic expectations of enterprise. Drawing on these findings and my experiences in Hong Kong, and also reflecting on the nature of the concepts commonly used in this space (transferable skills, innovation, entrepreneurship and enterprise) I have reached the following conclusions. First, that Innovation (the development of new things or methods) is a cognitive ability rather than an Enterprise skill. Secondly, that many PhD students are already innovative but that these skills could be enhanced and should be included in generic skills training. Third, and drawing on the dictionary.com definition of an Entrepreneur as 'a person who organizes and manages any enterprise, especially a business, usually with considerable initiative and risk', rather than try to develop entrepreneurship in our PhD students, we would do better trying to ensure that they understand the commercialization process (including how to recognize and manage different forms of risk), and teaching them how to build relations with commerce and industry so that they can work effectively with entrepreneurs.

Keywords

Transferable skills; Generic skills; Entrepreneurship; Innovation; Cognitive abilities; Enterprise skills

W23 A comparison of international models for researcher development

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Cecilia Stenstrom

University of New South Wales

Jane Wellens

University of Nottingham

Policy and economic shifts within higher education over the last decade have placed significant emphasis on research

productivity and preparing doctoral graduates for an expanding range of careers. These changes have resulted in the need for institutions to engage in building and sustaining researcher capabilities (Nagy, 2011). In response to these external and internal institutional drivers, three universities within Australia (UNSW), New Zealand (AUT) and the UK (Nottingham) have used different approaches to providing career relevant and effective researcher development. The outcome has been three distinct models which have evolved through evaluating practices, approaches and challenges in each specific context. These models incorporate postgraduate research candidates as a particular cohort, recognizing that their development as researchers is along a continuum of broader and longer term academic development. We will compare and contrast our approaches to skills development and attainment, engaging candidates with end-users and supporting a strong supervision culture. The paper will challenge researcher development practice to prioritize intervention delivery and measure the effectiveness and costs for supporting sustainable researcher-centric and career relevant development in the 21st century.

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Keywords

doctoral researchers; researcher development; employability

W24 'Getting real' in PhD students' researcher development

Lilia Mantai, Robyn Dowling

Macquarie University

The traditional purpose of a PhD degree is the preparation and development of researchers. Surprisingly, researcher development is mainly discussed in regards to post-PhD and early academics and researchers (McAlpine, Jazvac-Martek, & Hopwood, 2009; Sinclair, Barnacle, & Cuthbert, 2013). Little empirical research has outlined how early PhD candidates develop and experience themselves as researchers throughout their PhD process. This research adds value by exploring how PhD students experience, develop and change their professional researcher identity over a one-year period. Using a framework that casts researcher identity development as a continuous and incremental process (Åkerlind, 2008; Jazvac-Martek, 2009), this study is based on open interviews with 30 PhD candidates from two Australian metropolitan universities in the first two years of their study and follow-up interviews with 15 of these students after a year. Students' stories reveal, while the early stage of the PhD journey is often characterized by playful exploration of ideas, excitement, enthusiasm and socializing, a year later the PhD experience changes significantly as students' focus shifts towards completion, resilience, strategic networking and 'getting real'. These narratives mark or drive students' professional development as early researchers. This study implies the kinds of support structures that could be employed

to promote and encourage a positive PhD experience and strengthen researcher development.

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Keywords

researcher development; PhD experience; doctoral practices; doctoral education

W25 Supervision development in a differentiated higher education sector

Sioux Mckenna, Chrissie Boughey

Rhodes University

In South Africa, as elsewhere, there is enormous pressure to increase postgraduate output. This has led to those academics who have appropriate postgraduate qualifications carrying increasingly large supervision loads. Furthermore, there is an assumption, articulated in our national policy that acquiring a doctorate provides sufficient expertise to offer quality supervision. In response to this context we worked with a number of academics to develop a course entitled Strengthening Postgraduate Supervision (www.postgraduatesupervision.com). This course has been offered 32 times across the higher education sector thanks to funding from the Dutch and South African governments. The course does not belong to any individual or institution and all materials are licensed under Creative Commons so that they can be adapted and used by anyone at no cost. While the course attempts to move beyond the workshop model of staff development, by ensuring more sustained engagement over a six-month period, it runs the risk of assuming that supervision comprises generic best practice regardless of discipline or institution. This presentation draws on course participant evaluations and reports by the course facilitators to illustrate how institutional contexts influence supervision practices. In particular, this presentation considers debates that have arisen around whether postgraduate supervision is a pedagogy or an extension of the supervisor's research agenda; whether developing student writing is central to the role of the supervisor; whether issues of social justice are pertinent to deliberations about supervision; and about the extent to which one's approach to postgraduate supervision is a function of one's disciplinary norms.

Keywords

supervision development; staff development; institutional differentiation

W26 The English as an Additional Language SIG

Michelle Picard

The University of Adelaide

The EAL SIG provides an opportunity for researcher educators working with students who have English as an Additional Language or Dialect to share information and resources. This meeting will consist of three parts:

In the first part, we will consolidate a set of principles that the SIG has been developing for the past six months on the role of research educators working with EAL students. Using resources such as the Good Practice Principles for English language proficiency (Arkoudis et al. 2009) as well as the debates captured on the Research Communication Facebook page, we will develop a public statement that captures our important role. In the second part of our meeting, we will provide the opportunity for 'Three Minute Thesis' Style presentations of resources by up to 10 participants.

In the final part of the meeting, we will review the work done on the Facebook page and develop strategies for further dissemination.

Keywords

English as an additional language; research communication; good practice principles

W27 Early assessment: The Pre-Entry Language Assessment (PrELA) for testing academic writing competence before admission

Elizabeth Tynan, Kellie Johns

James Cook University

The James Cook University (JCU) Graduate Research School receives many requests to waive the English Language Requirement (ELR) for candidates who have English as an Additional Language (EAL). These requests relate both to entry to higher degrees by research and to scholarship applications. Prospective candidates have many reasons for not fulfilling the ELR (which is based upon IELTS) and a blanket 'no' to requests is not the answer. However, many waiver requests clearly do warrant close scrutiny, and the ability to deny them if the candidate clearly does not have sufficient language ability to begin a research degree. We have sought a means to properly assess these waiver requests that will ensure consistency, transparency and accuracy in the decision-making process and increase the chances that candidates who begin a degree with us will finish that degree. Since inability to write clear and informative academic text in English can be a barrier to completion, our aim is to ensure that only those with the required skills are admitted. In late 2014, in response to a large influx of waiver requests, we formulated an interim Pre-Entry Language Assessment (PrELA) test to take some of the guesswork out of

ELR waivers. This new test has proven remarkably effective, and we expect to bed it down as a permanent system during this year. The PrELA involves providing the aspiring candidate with a journal article to read and one week in which to take notes. The aspiring candidate is then required to undertake the 35-minute test, usually while supervised via Skype (although we have also administered the test face to face if the candidate is on one of our campuses). The test requires the candidate to use the notes from their reading to help answer a question related to the topic of the journal article. All aspiring candidates read the same journal article and respond to the same question, regardless of their research field. Results so far suggest that the PrELA is providing useful information to the JCU Dean of Graduate Studies about whether or not an ELR waiver is warranted. The JCU GRS is a pioneer in academic writing screening, having introduced the HDR Post-Entry Language Assessment (PELA) in 2013 to channel EAL research degree candidates into tailored writing support structures. The new PrELA is part of a growing toolkit intended to make informed decisions about EAL candidates and to ensure that they are properly supported throughout their degrees.

Keywords

graduate research; admission; English as an Additional Language

W28 A Bridge Too Far? Mandating publication as a requirement of the PhD

Denise Cuthbert

RMIT

Publishing by PhD candidates during candidature is increasingly considered best practice in graduate research education, an important indicator of the quality of the research produced by the candidate, and indispensable for those graduates seeking academic and research careers post-graduation. Given that the thresholds for the PhD and publication – that the work makes an original contribution to knowledge – are identical, it does not seem such a stretch to imagine that all PhD candidates should be required to publish as part of their degree. Yet, no Australian university mandates publication as a degree requirement, although in many programs in the STEM fields publication has become a de facto requirement for school/department sign off on submissions. This paper examines this issue by reference to international benchmarking and the educational and employability considerations which it raises. It also tells the tale of how one large Australian university grappled with the proposal to make a minimum of one eligible publication (either HERDC or ERA-equivalent) a degree requirement to be fulfilled for PhD graduation.

Keywords

publishing; graduate; research

W29 Incorporating publications into doctoral theses

Jo Edmondston, Michael Azariadis, Krys Haq

University of Western Australia

As the rate of publishing during candidacy increases for doctoral students, interest in how to best incorporate these publications into theses is also rising. At the University of Western Australia (UWA) there are few rules regarding thesis style and structure and no distinction is made between theses submitted for examination in the traditional style, theses formatted as a series of papers, or theses that fall somewhere in between these two styles. This absence of rules is intended to give students the freedom to embed publications in their thesis in a way that best suits their discipline and their research project, but this freedom, combined with changing views on what constitutes a thesis both within and between disciplines, raises a number of concerns for both students and supervisors. Many seek guidance to overcome the perceived problems associated with the inclusion of published material within theses, including formatting concerns. To help students and supervisors optimize the quality of theses incorporating publications, we reviewed the format of all available doctoral theses submitted for examination at UWA in 2012. We assessed how many publications were typically included within these theses, if publications were prefaced in any way, how references were managed, and how student contribution was made clear when the theses included multi-authored publications. We also assessed how frequently theses were formatted as a series of papers, which disciplines most commonly formatted theses in this way, how long the general introduction and general discussion chapters were, whether separate literature review and/or methods chapters were included, and whether papers were published prior to submission.

Keywords

doctoral theses; publications; thesis as a series of papers

W30 A framework for understanding hybridity in thesis format: What can doctoral theses tell us about PhD production and pedagogy?

Albi Odendaal, Liezel Frick

Stellenbosch University

The PhD by publication format has gained in popularity across academic disciplines as a means of doctoral production. This format is sometimes touted as a vehicle for shorter completion times, lower dropout rates, and higher academic productivity (including publication output), thus answering societal and economic demands for accountability and quality assurance in doctoral education. However, the practices underlying this alternative thesis format have not been well documented, and there have been scholarly calls for pedagogic caution. For this reason, we set out to determine what the products of this practice – doctoral theses – revealed about the management of research degrees. Our analysis of the formats and publication outputs of 1126 doctoral theses that were produced over a

seven-year period (2008-2015) at one South African research-intensive university, found a wide diversity both of formats and publication rates. This necessitated the development of a conceptual framework that moved beyond the simple binary of monograph and thesis by publication as a classification system. This paper describes this framework and explores associated trends in disciplinary traditions, supervision practices, and the publication of doctoral material over the seven-year period using statistical analysis of coded data. The paper argues that hybridity in thesis format and publication is a common occurrence that should be accounted for in doctoral production and pedagogy.

Keywords

doctoral education; PhD format; pedagogy

W31 Doctoral Education: Discipline or what?

Alistair McCulloch

University of South Australia

It is now a commonplace to say that doctoral education has become a major and increasingly important part of the work undertaken by universities and that it is of increasing concern to national governments as the discourse of the knowledge economy spreads across the globe impacting on both national economic development strategies and higher education policies. It is also possible to identify (as it has been for two to three decades) a growing number of academics a significant part of whose work focuses on doctoral education. These academics publish widely in the form of monographs and articles, deliver papers at conferences where they meet on a regular basis, and have a base in universities in many countries. These publications address an ever-widening range of topics and issues. The development of this body of work and the group of academics producing it raise an interesting question about their status as a group and about the status of the focus of their activity, doctoral education. Put simply, the question this paper seeks to address is, does Doctoral Education constitute a discipline, or simply an area of interest, or is it something else?

Keywords

doctoral education; academic development; communities of practice

W32 The National Framework for Doctoral Education in Ireland

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The National Framework for Doctoral Education, Ireland, was formally launched in June 2015. The framework mainstreams best practices in structured PhD programs. Its principles commit the key stakeholders in Irish graduate education to the highest standards in the provision of doctoral education and research. Key to the adoption of the framework was the support from major funding bodies of doctoral education in Ireland, as a framework adopted by the higher-education institutions, which

may be at odds with the major funding bodies, would not be successful. The framework sets out principles for doctoral education, which are cognizant of diversity across the Irish higher education system and across doctoral programs. In addition to incorporating the Salzburg principles (2005), additional guiding documents included the Salzburg II recommendations (2010) and the European Commission 'Principles for Innovative Doctoral Training' (2011) thereby ensuring that an adopted Irish framework was aligned with European and international standards. The framework was designed to: facilitate consistent excellence in the quality of postgraduate research education and training; be an enabler for cross-institutional collaboration to enhance an improved learner- experience; maximize employability and underpin the international standing of the Irish doctoral award. This paper will report on the development of the framework by providing detail on its overall purpose, the principles underpinning the framework and the expected doctoral outcomes to be attained on completion a doctorate in a higher education institution in Ireland.

Keywords

doctoral education; research; quality; established structures; doctoral outcomes

W33 How does your garden GRO? The strategic and philosophical foundations of research education and development at La Trobe University

Kelly Farrell, Jeanette Fyffe

La Trobe University

La Trobe's RED (Research Education and Development) unit began in 2011 with just one academic and one administrative staff position. And so began the endeavor of building RED's reputation among staff and graduate researchers, and the development of an effective suite of research-education activities for a University intent on building its research income. By early 2014 two additional academic positions had been added and the design and implementation of a new Graduate Research School had begun. This presentation traces the development of research education at this IRU university and outlines the strategic and theoretical stances the RED team takes in its provision of research development for doctoral researchers. With a relatively small team with whole-of-career, whole-of-university responsibility, how do we act strategically to get maximum impact? What kind of framework do we use to design curriculum that aligns with institutional research strategy while meeting the immediate needs of our graduate researchers? How do we satisfy the sector-wide imperative to ensure the employability of PhD graduates without losing the vital pedagogical, social and philosophical underpinnings of doctoral education? Three characteristics define our vision of the 21st century La Trobe PhD: by graduation they will be savvy, ethical and contemporary researchers. In this presentation we will present three mini case studies of RED initiatives that assist our candidates to develop these attributes: Graduate Research Online (GRO), our social-media sustained ACWRIMO activities, and the Intellectual Climate Fund.

Keywords

researcher development; intellectual climate; entrepreneurial skills; research orientation; eportfolio; ACWRIMO

W34 Research integrity and HDRs: Beyond compliance and towards responsible research

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University of Sydney

There is an increasing understanding that research students must confront an altered landscape in the way that they engage with their projects and the outcomes arising. Whilst the Australian Code for the Responsible Conduct of Research has underpinned research conduct for a number of years, it is evident that amongst the HDR cohort there is often little understanding around the ethical conduct of research and the responsibilities that this entails. A number of institutions have now moved to mandate training around the code as a mandatory activity for HDR students. This training is intended to provide awareness around key issues related to research ethics and provide a thorough grounding in order to circumvent potential misconduct. This paper will provide an overview of the adoption of this model at the University of Sydney and consider the barriers and facilitators for student engagement in this process. It will also consider whether other important issues in the research domain such as data management and moves towards open access should be added to the suite of training offerings provided for HDR students in order to better prepare them for research careers.

Keywords

research integrity; research code of conduct; Higher Degree Research

W36 Developing a supervisory ethics of care: Applying feminist pedagogy to HDR supervision

Jeannie Daniels

University of the West of Scotland

Doctoral research supervision can be a complex undertaking, especially when it involves students from culturally diverse educational backgrounds, and when it takes place in a higher education environment of developing, rather than established, supervisory structures and practices. In this paper I describe how I developed my approach to doctoral supervision in such a context. Recognizing my feelings of care and concern for my supervisees (4 international, one from a non-HE background) as they negotiated the various challenges faced in becoming researchers, I sought a way of supervising that would acknowledge these concerns, provide the appropriate support and guidance for these students and at the same time facilitate independent researcher development. Understanding research degree supervision as a form of teaching, I investigated notions of caring and developed a liberatory feminist pedagogical model of supervision that embraces an ethics of care (Held, 2006) informed

by Pettersen's (2012:366) notion of mature care addressing the 'relational and reciprocal aspects' of shaping such a relationship. I describe the implementation of this model over the first year of the supervisory relationship, from the perspectives of the supervisor and supervisees. I argue that feminist pedagogy can offer an effective approach to doctoral supervision that has relevance for and beyond women's educational needs.

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Keywords

doctoral research; HDR supervision; ethics of care; feminist pedagogies

W37 UniSA's research degree student system goes mainstream

Kim Murphy, Kim Hofmeyer

University of South Australia

UniSA launched its new research degree student management system in November 2015 and said goodbye to Research Master and double handling forever! Research degrees have been embedded in the University wide student management system and, as a result, UniSA has been able to consolidate its coursework and research student administration activities and resources where appropriate. We all know how important this is in the current economic environment. However, the way in which the system has been developed ensures the nuances of candidature management are not compromised by a student system whose primary purpose has been the management of undergraduate and postgraduate coursework students. And it's innovative. The new system has allowed us to introduce flexible research enrolment periods, consumption based fees and reporting, online reviews of progress and an online thesis examination tool. Research degree supervisors and students manage their activities through specially designed UniSA research portals and research administrators use 'workcentres' to prioritize and manage tasks. Activities can be tracked, documents attached and reporting strengthened. Scholarship administration and management has been dramatically improved. In this presentation we will discuss three main components of the new system that support improved efficiencies for staff and provide a progressive approach to candidature management. These are:

- Research study periods and consumption based fees
- Online Reviews of progress
- Online thesis examination

Keywords

student management system; scholarships; candidature management; online administration; online thesis examination; online reviews of progress

W38 The RASSA: A tool to score and rank scholarship applicants

Jennifer Scott, Rory Wolfe

Monash University

Every institution offering scholarships is faced with the common dilemma of how to select the best applicants from what is often a diverse pool of applicants. The Research and Academic Scores for Scholarship Awards (RASSA) was first implemented in late 2007 in the Faculty of Medicine, Nursing and Health Sciences at Monash University to help with the assessment and ranking of large numbers of scholarship applicants. The RASSA allows us to score applicants in a consistent and transparent manner with regard to 'Academic Merit' and 'Research Potential', the two principles identified by Monash University for the award of scholarships. Despite discipline-specific differences across the Faculty, applicants are successfully compared against objective rather than subjective criteria, creating a fairer, more equitable selection process. Efficiencies have also been clearly demonstrated with a 50% reduction or more in the duration of ranking meetings. The introduction of the RASSA and its subsequent additional improvements has transformed what was a complex and time-consuming process into a simple, fast and effective method of selecting and ranking the best scholarship applicants. With further modification and input from humanities colleagues, the RASSA has the potential to be implemented university-wide. Furthermore, the RASSA could become a useful tool allowing the common assessment of scholarship applicants across institutions, particularly in the STEM disciplines.

Keywords

scholarships; assessment; scoring; ranking tool

W39 Proficio: Empowering PGR students in their training decisions

David Pevalin, Luis Vasconcelos

University of Essex

Proficio is the professional development scheme for PGR students at the University of Essex. The scheme was created in 2013/2014 with the aims of (i) empowering students in their training decisions, (ii) allowing students to personalise their training so as to meet their specific needs, and (iii) boosting the quantity and quality of the training opportunities offered to students. The scheme consists of giving each student a fixed amount of funds to spend on Proficio courses. University staff design and deliver the Proficio courses and students are charged a fee (from their Proficio funds) for attending the courses. The innovative and decentralized decision-making means that students decide, in conjunction with their supervisors, how they spend their funds in a way that best meets their individual training needs. Course provision is demand-led as members of staff decide which courses they will offer in response to uptake/desirability/demand. In this paper we present more detail on how the scheme works, what has worked well, and the challenges faced so far.

Keywords

research skills; training needs analysis; student-led

W40 Beyond student satisfaction: Measuring the quality of doctoral training programs

Juliet Lum, Kim Khim Tan

Macquarie University

Over the last 15 years, particularly in Britain and Australia, there has been a shift in doctoral education from the supervisor-student apprenticeship model to a more structured program of research training that prepares candidates for careers in higher education and elsewhere (Thomson 2014). Universities now invest significant resources into establishing doctoral training centers, offering candidates a suite of courses to develop capabilities that extend beyond thesis writing to transferable skills such as project management, strategic networking and entrepreneurship. But how is the quality of such training programs evaluated? In QPR 2014, we showcased our Higher Degree Research (HDR) event management system that both manages event registrations and administers participant satisfaction surveys to attendees; the system thus provides program managers and the university with an indication of the extent to which the program is meeting HDR student demand and expectations. However, feedback surveys administered immediately after a workshop provide only one measure of quality, and are arguably a blunt indicator of the usefulness or long-term value of that training event. In this paper, we contend that a doctoral training program can be regarded as 'high quality' if it produces not only satisfied candidates, but skilled candidates. We present enhancements recently implemented in our event management system, and discuss how these provide a richer evaluation of the quality of our HDR training program, extending beyond student satisfaction.

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Keywords

doctoral training program; event management systems; measuring quality; HDR training needs; student satisfaction

W42 The money or the weather? Achieving doctoral completion rates of about 82% in under four years

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University of Otago

In this session, we report on two analyses of PhD cohorts at the University of Otago, New Zealand. The first analysis focused on the cohorts beginning their PhD from 2000- 2008, and found an average of 82% submitted their thesis for examination in a median time of 3.9 years. The highest completion rates were found in candidates with variable enrolment (84%) followed by full-time candidates (83%), with much lower completion rates for part-timers (63%). However, in relative terms (i.e. equivalent full-time study), part timers completed the fastest, in an average

of 2.6 years, with full-time candidates taking 3.8 years. Slightly more women than men completed, but the average time taken was the same. More international candidates completed (87%) compared to domestic candidates (81%), and the internationals were faster. Those with a University scholarship also had higher completion rates and faster completion times. The highest completion rates occurred in candidates in the health sciences (87%) followed by science (82%), humanities (76%) and commerce (72%), but the fastest times were in science and commerce, with humanities the longest (4.6 years on average). The second analysis focused on cohorts beginning their PhD from 2000-2012 and used a survival analysis to explore key influences on completion. Key contributors to these high rates and fast times are thought to include the funding regime, quality supervision, and institutional support for the development of research skills.

Keywords

completion rates; completion times; doctoral attrition; survival analysis; cohort analysis

W43 Into the Academy? The hopes and dreams of doctoral candidates who want academic careers and the structural and cultural barriers to achieving them

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There is growing interest in Australia on the role of the contemporary PhD in preparing the higher education workforce of the future. A key part of this discussion has focused on the ways in which doctoral candidates are developed for the teaching requirements of an academic career (Greer et al. 2015; Smigiel, 2008; Probert, 2014b). Drawing on data from more than 200 students at QUT who participated in the Teaching Advantage Program, which develops skills in teaching, coordinating subjects and building an academic career, this research focuses on the experiences and perceived challenges of doctoral candidates who aspire to become academics. We explore their hopes and dreams, and the barriers to achieving them. We conclude that there are key structural and cultural barriers that inhibit doctoral students vision of themselves as effective teachers. These include supervisor support, language, culture, and access to teaching opportunities during the candidacy. The implications for institutions and individuals are examined.

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Keywords

PhD; doctoral students; teaching; employability; international students

W44 Being a scholar in the 21st century: The role of the doctorate in preparing early career academics

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Eva Brodin

Lund University

Silwa Claesson

Gothenburg University

Sioux McKenna

Rhodes University

A doctoral degree has increasingly gained currency within academic practice within the 21st century, as most disciplines now require that early career academics obtain a doctoral degree as a basis for employability at universities. Working in academia implies more than conducting research as scholars are also supposed to teach, collaborate across disciplines, and engage with the overall society. Accordingly, this complex set of competencies is what young academics should be prepared for during their doctoral education. However, most doctorates tend to be focused on developing a relatively narrow set of research skills (at least within countries such as the UK, Australia, South Africa and Sweden). This begs the question whether the doctorate adequately prepares aspiring early career academics for scholarly practice? This paper uses the Vitae Researcher Development Framework (CRAC, 2011) as a lens through which the experiences of 20 early career academics from South Africa and Sweden are analyzed in terms of how their doctoral studies prepared them for their academic work context. The paper highlights how doctoral education prepared these aspiring academics in certain instances and indicates areas where it did not. As such, the contribution lies in reflecting on what innovations in doctoral education might be necessary given the demands of scholarly practice.

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Keywords

early career researcher development; doctoral education; academic work

W46 Symposium: What are successful supervisor development programs? Nordic traditions meet Australia – similarities and differences.

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Aalborg University

Margaret Kiley

The Australian National University

Research education in many European countries, Australia, and America has undergone substantial changes within the last decade (McCallin et al, 2012). The student population and diversity has increased significantly, and the policy has moved towards more closely audit on effectiveness, quality, and outcome of doctoral programs (Engebretson et al, 2008). In response, there has been increased interest in supervisor development (Kiley, 2011). In the Nordic countries the need for supervisor development has indeed been recognized, and supervisor courses are now offered at most universities in Denmark, Sweden and Norway. Some places the courses are extensive and even mandatory for new as well as experienced supervisors. The increased need for ensuring high quality doctoral supervision in the Nordic countries is not only an effect of the doubled intake of doctoral students over the last decade. It is also caused by recent structural changes in these countries. At the end of 1990's the research education was formalized in terms of mandatory PhD schools, and the doctoral candidates were recognized as professional employees rather than students. Whilst these changes are steps along the way, they have not solved all issues faced by doctoral candidates and supervisors today. Consequently, our supervisor development programs need to address core issues such as how to establish and maintain positive work relationships with doctoral candidates and how to ensure that the candidate is not exploited as a source of labor. In Australia, there is a broad range of practices, including in some cases award courses on research supervision, courses offered online and some universities requiring extensive involvement in development programs and others requiring no particular development. The symposium includes three presentations, all focusing on competence development of doctoral supervisors. The contributors all have extended experience with running supervisor courses and have collected data on which elements of the courses the participating supervisors find most and least worthwhile. We will draw on data from this work and we will cover the following three themes from different perspectives:

- How are the overall structure of the course and what incentive structures are used to motivate supervisors to participate?
- What is the course content and form? And which part do the participants find most worthwhile? (based on feedback-data)
- What do we recommend for future supervisor development initiatives?

Keywords

supervisor development; development programs; curriculum; supervisor policy

W47 The shifting answer to the question of where to train: The case of Asian-born doctoral students in bioscience

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Prospective Asian doctoral students in science have significantly more local and regional training options today than in the past. The existing literatures on scientist and international student migration tend to emphasize push-and-pull structural factors at the country- or field- level that influence this doctoral decision, downplaying the socially- embedded subjectivities involved in the decision-making process. The influence of these students' professors who, increasingly, are returned Asian scientists with western training and experience with both scientific worlds, has been understudied to date.

Drawing from interviews with 82 Asian-born, western-trained bio scientists in academia, now working in either Singapore, India, China, or Taiwan, we analyze the doctoral training advice they would give to a promising science student in their current country to assess if these scientists would encourage their current students to look westward for their doctoral training. We find significant variation in the doctoral/migration advice that interviewees gave, with the modal category of advice being neutral rather than emphatically west-directed. We attribute this to a growing sense amongst interviewees that the research environment in top Asian universities has improved significantly and that, from a technical standpoint, it is increasingly on par with what is available in all but the top western universities. The bifurcation of the training period for academic bio scientists into a doctoral training phase followed by a postdoctoral fellowship means that aspiring Asian scientists can wait to go to the West during their postdoctoral training. These changes set the stage for greater diversity and dynamism in the migration streams of Asian-born scientists-in-training in the future.

Keywords

doctoral education; Asian universities; destination choice

W49 Supporting doctoral writing by Maori and Pasifika candidates: Supervisory good practice pathways

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This paper discusses how supervisors might give good writing support to Maori and Pasifika doctoral students. Our findings may provide insight into supervision of indigenous candidates and be useful in non-New Zealand contexts. Institutional

rhetoric from Aotearoa New Zealand stresses commitment to success for Maori and Pasifika students. There is real desire behind that language: The New Zealand government commits significant funding to reward its achievement--and institutions like that money--while they accept their Te Tiriti o Waitangi legal obligations to Maori. Many academics care about equitable success for equity reasons and to fulfil the expectation that universities contribute to social benefit. The government also recognizes responsibility to Pasifika, where there is often a protectorate background. Yet to date, at doctoral level, tertiary institutions have not been able to deliver equal graduation rates at doctoral level. For example, the 2006 census shows that Maori were responsible for 2.3 % of doctorates at the time when 14% of the population identified as Maori (Carter & Laurs, 2014: 59). We hone in to the personal experience of the doctorate. How can supervisors turn these figures around and actually support Maori and Pasifika success? We focus on supervisory management of doctoral writing from these groups. Working across cultures raises issues for academics (Guerin & Green, 2014) that affect supervision in particular (Manathunga, 2010). How the changing nature of the doctoral student (Thomson & Walker, 2010) affects writing and its support by supervisors, in general, begs for more understanding. What little general literature there is on supervisor's development of their students' research writing again shows a troublesome area of practice. A review of research literature consistently showed confusion, anxiety and frustration for both students and academics regarding thesis writing (Hardy & Clughen, 2012: 25ff). There is little literature for supervisors on giving useful writing feedback, and to our knowledge not much workshop support for supervisors looking at research writing feedback. We draw on literature on indigenous pedagogies for engagement with academic literacy, as well as reflection by the authors on their own experience. This enables us to propose a framework for good practice that considers how terms such as culturally appropriate and inclusive can translate into what supervisors actually do.

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Keywords

Maori doctoral support; Pacific Island doctoral support; Pasifika doctoral support; Support for the indigenous doctorate

W50 'I don't want something that looks like my kid brought it home from daycare': why we should (and shouldn't) use digital badges in candidature management

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Effectively monitoring academic progress during research degree candidature is a difficult problem. Previous research (Cuthbert and Mewburn et. al. 2013, Mewburn, Cuthbert and Tokareva 2013) has shown that progress reporting processes that fail to take into account the academic and social context in which they operate can result in candidates and supervisors creating 'dead' reports that are not useful for administration or academic purposes. One possible solution to this problem is to look for ways to make progress reporting more than a form-filling administrative exercise. This paper reports on an Office of Learning and Teaching funded project to explore the use of digital badges in progress reporting. Digital badges can provide research students with evidence of achievements as they happen, rather than just a retrospective account of what research was done. The badge acts as a visual 'anchor' in a confusing research education landscape, helping students see pathways to academic achievement and have a way of keeping a record of what they have achieved which is publicly accessible and shareable. The project had mixed results, showing that without a clear value proposition, higher degree by research students were unlikely to embrace digital badges, but that with the right incentive structure and frameworks in place that badges can act as motivators and reminders of learning. These results showed that we should not be too quick to assume that digital badges work the same way for the higher degree by research cohort as they might for undergraduates. Before further investment is made, teaching and learning professionals should carefully consider the 'how', 'what' and 'why' of digital badges for the higher degree by research community.

Keywords

progress reporting; administration; online learning; digital badges

W51 Personalising induction programs to respond to research higher degree student diversity

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In Australia research higher degrees attract a diverse student population in terms of educational pathways, career trajectory and background (educational, cultural and social). The literature suggests that expectations are not systematically addressed early enough to make a difference. Moreover, expectations are addressed from one direction – those of the institution. About one third of candidates will experience a problematic mismatch in expectations and until very recently the relative importance of mismatch was not flagged either in relation to attrition or more generally in regards to diversity in the doctoral population (Holbrook et al. 2013). Research degree candidates are adult learners with a broad range of experience. Their initial expectations of their degree reflect the anticipation of what lies ahead based on their previous experience, their dispositions toward learning, and their motivators for enrolling in a research degree. Acknowledging and addressing candidate expectations early, at this transitional phase in candidature, has the potential to counter a range of potential obstacles to successful completion of the degree. This paper reports on data collected at one institution to explore early expectations and experience in relation to equity groupings (including First in Family to attend university, carer responsibilities, disability and Non English Speaking Background). It is posited that further focus on personalising induction will benefit research learners through developing more responsive induction programs that are reflective of candidates' diverse backgrounds.

Keywords

integrative model, supervisory practice, doctoral supervision, practice-led research

W52 Walking the Path: Embedded learning and making new knowledges in the doctoral journey

Rose Lucas, Helen Borland, Ron Adams

Victoria University

What knowledge and skills do graduate researchers need to build during their doctoral journey? How do we optimize the state of mind necessary for undertaking the radical learning required for such innovation? As in any experience of intense personal growth, graduate researchers need to move from relative passivity and incipient knowledge to an active engagement within wider debates. Finding and occupying such a speaking position goes beyond simply acquiring skills. The doctoral candidate needs to come to a personal and philosophical accommodation with the reasons for their research journey, the sometimes bewildering complexity of

its components, and how to knit them together in a way that will make a difference to the world. Like all of us, in order to learn, the graduate researcher must grapple with why as well as what it is that they are learning; they must find a particular and embedded conceptualization of where they are heading and what might be needed to achieve that goal. Building on work currently being done at Victoria University, this paper will discuss the development of skills of reflection and personal agency as vital factors in the evolution of graduate researcher to independent researcher. It will outline how we are helping graduate researchers find a position of mindful attention to their work, demonstrating how such student-centered development can provide an effective framework for meaningful knowledge-creation.

Keywords

graduate researcher development; student-centered learning; mindfulness and learning

W53 Transforming creative practitioners into creative practice researchers: the development of an enabling peer-to-peer pedagogy

Craig Batty

RMIT

This paper reflects on the development of a peer-to-peer pedagogy that has enabled a group of creative writers to transform into successful creative writing researchers. Through the formation of a peer-to-peer group that complements traditional structures of supervision, this pedagogical intervention brings to the research degree a deep experience of collaborative and experiential learning that assists in navigating and negotiating the movement from creative practitioner to creative practice researcher. A four-year project to date, this group has made use of theoretical and disciplinary contexts to devise its own research training ecosystem – one that arguably goes far beyond candidate writing and reading groups discussed in the literature. As a result, candidates have quickly become creative practice peers in the academy, not only presenting at conferences and publishing in journals and edited collections, but also becoming recognized for their contributions to understanding how creative practice research can be successfully undertaken. This paper will trace the origins and development of the group; position the group within current literature on peer-to-peer learning in the research degree space; and offer ways in which it might be adapted and implemented in other creative practice contexts.

Keywords

creative practice research; creative writing; research degree; peer learning; peer-to-peer; supervision

W54 Innovative models of doctoral training: Using cohorts to improve recruitment, retention and connectedness of HDR students

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Rick Speare

James Cook University /Tropical Health Solutions

Recruitment, retention, and completion of higher degree research (HDR) students is crucial to successful research training in the University setting. Cohort approaches to HDR training remain rare, with no systematic comparisons of the experiences of cohort students with conventionally recruited and trained HDR counterparts. The Division of Tropical Health and Medicine began a cohort program in 2011 designed specifically to support part time students working full time to improve recruitment, retention and completion. We have recruited two cohorts each year since then with nine cohorts totaling 97 HDR students. This project used a mixed methods approach to survey and interview HDR students. In this paper we report on the survey that included questions from the Doctoral Student Connectedness scale (Terrell et al., 2009) which were analyzed using a median test. The survey revealed that students within the Cohort program (n=25) felt more strongly that research students cared about each other, that they could rely on other research students and that they felt a spirit of community between other students and themselves compared to those students not in the Cohort program (n=35). The Cohort students also reported a greater feeling of community between themselves and staff compared to the other students. Open ended questions also revealed that HDR cohort students report strong satisfaction with the support and research training offered. HDR cohort students report stronger feelings of connectedness with other HDR students and staff compared to other students. Cohort Doctoral Studies programs offer an effective and innovative approach to doctoral education.

Keywords

doctoral cohorts, community

W55 Model Educational Program to Promote the Career Journey in Biomedical Postgraduate Research Cohorts

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Peter MacCallum Cancer Centre

Keely Bumsted O'Brien, Stephanie Conos

Walter & Eliza Hall Institute of Medical Research

The career journey in biomedical research is increasingly complex, and postgraduate educators are challenged with balancing research-intensive training programs against career development and transferrable skills acquisition. Education-focused research at Peter MacCallum Cancer Centre and the Walter and Eliza Hall Institute of Medical Research identified students' need for further support in developing research, project management and general skills. We developed a workshop program centered on three

basic themes: Career development including networking, grant preparation, non-academic career pathways, and methods in core technologies; Communication (oral and written), thesis, CV and cover letter writing, poster design and oral presentation skills; Leadership training and management strategies for committees and supervisors. Sustained attendance and formal evaluations demonstrated student engagement and enhancement of their research and generic skills. Developing from this experience, we propose a model for PhD training, that includes 1) Postgraduate Program Requirements, including support for the research project, progress reviews and supervisor training and management, 2) Research skills development, including mastery of core technologies, critical analysis through exposure to journal clubs, scientific seminars and presentations, 3) Professional and Career development that explores generic and transferrable skills, mentoring, networking, leadership, and career opportunities and 4) Science Communication including thesis and journal writing skills and oral or poster presentations at conferences to promote Interdisciplinary and International exposure. By complementing established conventional training for Biomedical PhD students, our program allows our research students to develop a higher degree of independence and leadership during their candidature to enhance preparation for a competitive and broader job-market.

Keywords

research skills; upskilling; enabling student potential; transferrable skills; career development; employability

W56 Mapping 'Pitching Research' tasks into the RSD7 framework: A pedagogic perspective

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The current paper maps versions of Faff's (2015a, b) pitching research template designed for student tasks/assessment into the research skill development (RSD) framework of Willison and O'Regan (2007). Moreover, using the 7-level RSD7 version, we explain how meaningfully layered pitching tasks can be designed to give a wide range of students an appropriately calibrated research challenge – from elite year 12 students at high school, all the way through to early-stage PhD students at university. Four key dimensions of the pitching research setting enable a clear and easily implementable pedagogic strategy. Specifically, the four dimensions relate to whether the pitch/pitch task: (a) is a partial vs. a full exercise; (b) is reverse-engineered on an existing paper vs. a 'real' pitch on a yet to be executed study; (c) is totally prescribed by the 'pitchee' educator/supervisor vs. full choice pitch; (d) is a 'third-party' exercise vs. totally 'owned' by the pitcher. At one end of the spectrum, a 'Level 1' 'prescribed research' task (i.e. lowest degree of difficulty in the RSD7 framework) would be a 'partial' pitch based on reverse-engineering a designated short and simple research article that has been authored by a third party. At the other end of the spectrum, a 'Level 7' 'enlarging research' challenge (i.e. highest degree of difficulty in the RSD7 framework) would be involve a full pitch of a brand new idea, with choice on each and every dimension totally in the hands of the pitcher (student/researcher) about their own research plan(s) (e.g. a plan for one essay in their PhD thesis).

Keywords

pitching research; research skill development; pedagogy; teaching and learning; new research ideas; pitching; template; research proposal; novice researcher; research mentor

W57 Building an integrated quality culture in UCD

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In 2006, University College Dublin (UCD) introduced the first Structured PhD in Ireland to enhance the doctoral student experience. The UCD Structured PhD means that each student has a Doctoral Studies Panel (DSP), a formal progression step in their programme, professional development planning and transferable skills training. 10 years on, the Graduate Studies and Institutional Research Units have initiated a systematic investigation of how the elements of the structured PhD are adopted across the university. UCD's vision is, to embed an 'integrated' quality assurance culture as described by Byrne J., Jørgensen T., & Loukkola T 2013, where student, supervisor and support staff are fully informed of, and engage with, quality enhancement procedures in a cultural shift away from the top down managerial model. Indicators of school engagement with the quality assurance processes are -DSP allocation -DSP-meeting records -and progression details. Garnering accurate institutional data and assisting stakeholders in interpreting the information at crucial steps in the PhD student lifecycle, is key to managing doctoral success. Furthermore, populating the student information systems with time relevant prompts for school staff and developing online repositories for meeting records will support supervisors in the effective and timely management of their supervisory practice. Genuine quality enhancement in the university can be facilitated through providing these supports to students, supervisors and schools. The outcomes of this investigative project will be reported in this paper.

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Byrne J., Jørgensen T. & Loukkola T. (2013) Quality Assurance in Doctoral Education – results of the ARDE project EUA Publications

Keywords

quality assurance; institutional; data engagement

T01 Slow writing in fast times: Supervising doctoral writing in the accelerated academy

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Bill Green

Charles Sturt University

Is there anything new to be said about doctoral writing? We respond to this provocation by revisiting established perspectives on doctoral writing in light of the tsunami of

changes impacting research writing and the academy.

Increasingly higher education, and especially research and doctoral education, is characterized by a sense of remorseless urgency to make 'product', thus eclipsing the value of 'slow thinking', reflection and contemplation. Is this myopic focus on research outputs, which promotes fast supervision and furious writing, at odds with the pedagogical scholarship that argues for safe, incremental and scaffolded development of writing? How are supervisors and students (re)positioned by this context? We consider how this environment demands rethinking. We propose two key influences requiring attention: notably, the expanded space of doctoral teaching and learning that necessitates different pedagogical practices of supervision, and the intrusion of multiple stakeholders into the supervisory space including the influence of writing technologies. In this exploration, we seek to unsettle notions of performativity and intensification as experienced by the neoliberal student and supervisor subject (Petersen 2012; Redhead 2011). We ask how we can re-conceptualize research writing and more generally research literacies? How do we rethink pedagogies for this highly output-driven context? How do we re-envision slow writing in a fast world?

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Keywords

research writing; supervision; pedagogies for research writing

T02 Enablers and barriers of getting those words: The materiality of doctoral writing

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In this study, I move away from the common emphases in doctoral education on the social interactional nature of doctoral education (within supervision teams or research groups) or as a part of institutional systems of research production. Instead, I explore doctoral writing as 'socio-material' Sørensen (2011, p5). Following the work of Deleuze and Guattari, I try to break down oppositions between self and the other, human/ machine, human/ physical environment to identify the enablers and barriers to doctoral writing and to unpack the 'materiality' of this phenomenon. Their concept of 'materiality' is particularly pertinent in doctoral education where individual and group interests, personal and work environments, technologies and the individual using them merge in the production of text and the writing process is impeded or aided in the regulation of various 'flows, including the biological, technological and cultural' (Brians, 2011, p134). In order to identify these 'flows', I follow 20 doctoral students over the period of a month. An application (the PhDometer) that

measures the number of words written and time spent writing (<http://www.phd2published.com/the-phdometer-2-0/>) is used with a daily record of the 'who, what, where and when' of the writing. Results indicate variation in individual writing practices and a range of support mechanisms that enable doctoral writing that are not part of mainstream researcher education provision.

Keywords

doctoral writing; materiality of writing; tracking writing process

T03 Feedback on doctoral writing feedback: An ako approach

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Deborah Laurs

Victoria, University of Wellington

This paper sheds light on the practice of effective doctoral writing feedback by drawing on student experiences [n 80 at the end of October, with the study still open] (UAHPEC approval 013694, 2015). Given human differences, there will be differences in how particular supervisor/student relationships work well, yet our findings are consistent enough to give helpful pointers for good supervision of doctoral writing development. We suggest that regarding teaching and learning as one activity, embodied in the Maori word 'ako,' is an apt approach to learning within the doctoral supervision relationship, where typically students and supervisors learn together through the process of doing. Here, student experience offers guidance for a practice that is under increasing pressure. There are many reasons, both fiscal and ethical, for why good doctoral writing support is desirable. Pressure for timely completions means institutional pressure to secure government funding is applied to supervisors and students. Increasing internationalization of doctoral education complicates writing feedback, with many supervisors lamenting that they do not have the necessary time, and with international students feeling underprepared, alienated (Ali & Kohun, 2007), second class (Morley, Leonard, & David, 2002: 271), and under-supported (Strauss, Sachtleben, & Turner, 2006). There's more pressure for timely submission; poor writing feedback is taxing for institutions, students and supervisors. We know that what happens in practice is varied. Anthony Paré's (Paré, 2011: 66, 71) research into 30 supervisors at work identified that often very good supervisors 'lack the linguistic and rhetorical vocabulary' to give feedback, so that their writing comments are 'fuzzy' and students couldn't interpret them: 'despite their good intentions and thoughtful efforts, the supervisors... struggled to help students write' (Paré, 2011). Hardy and Clughen's review of research literature produces a research-based cacophony showing confusion and anguish for both students and academics regarding thesis writing (Hardy & Clughen, 2012: 25ff). International students in particular can be frustrated by vague supervisory feedback that their written work is inadequate without explaining how to improve it (Yeh, 2010). Our combined experience of 11 and 12 years of working with doctoral students and supervisors, and the literature cited

above, suggests that many supervisors could benefit from practical suggestions, strategies and techniques for doctoral writing feedback. Keen to contextualize, locate and ground suggestions for supervisors in experience of practice, we have experience stories from doctoral students that collectively identify helpful and unhelpful supervisory writing feedback.

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Keywords

doctoral writing feedback; supervision; advising doctoral students; writing as social exchange

T04 The art of joint supervision of graduate students: What advice should we give supervisors?

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Across the world there has been a trend away from the single supervisor, particularly for doctorate degrees to joint supervision. The United States was an early mover to a team approach with the advent of advisory committees. More recently there has been movement away from the sole supervisor model in countries which follow the UK or European doctoral model. Joint supervision is more complex than sole supervision because more relationships are involved. New supervisors can find joint supervision difficult because of these complexities, many of which they may be unaware of. Hence the need for supervision education in the art of joint supervision. This paper answers the question of what advice should be given to

supervisors on the topic of joint supervision. Twelve advantages of joint supervision that have been identified in the literature are listed. That different supervisors can have different supervisory styles is one of the complexities that needs to be cognized. For this reason, Gatfield's model of different supervisory styles is discussed. Fourteen issues or problems that can occur in joint supervision are summarized and the paper concludes with direct advice for supervisor on how to make joint supervision work. The three key elements of that advice involve ensuring there is good communication, aligning everybody's expectations and respecting the views and opinions of fellow supervisors.

Keywords

advantages of joint supervision; advice for supervisors; difficulties of joint supervision; styles of supervision

T06 The pleasure and pain of co-supervision from the perspective of doctoral writing consultants

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Doctoral writing is often seen as the last task to complete on a doctoral student's agenda. Most prefer to focus on their initial idea, the theoretical underpinnings, the methodological approach and the data collection. Writing in the initial stages especially, is not seen as an essential part of the conceptual process and one that is best developed from the commencement of a student's candidature. While doctoral writing is central to doctoral scholarship, 'writing is marginalized and shrouded in silence' (Starke-Meyerring 2014). However, there seems to be a growing understanding of its importance as a tool for thinking. As a consequence, the positioning of Academic Language and learning (ALL) academics as remedial support providers and 'fixers' of lexico-grammar seems to be shifting. The hard won battle for acceptance as equals on the supervision team may be close or are we delusional? Recent institutional restructure, the changing perceptions of the role of ALL lecturers as positive contributors to the building of research writing capacities and the imperative to ensure completion are likely to have impacted this shift. Being part of the supervisory team has been a pleasure, in most cases, but the larger implications of becoming co-supervisors are not yet clear. In this paper, we use the narrative inquiry mode to reflect on the pleasures and pain of becoming co-supervisors.

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Keywords

doctoral writing; co-supervision; academic language and learning academics; doctoral writing development

T07 Reframing doctoral examination as teaching

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Elke Stracke

University of Canberra

Doctoral examiners are usually asked to evaluate a thesis based on a set of institutional criteria. They are asked to evaluate and make a judgment on the quality of the thesis and provide assessment feedback if certain goals are not attained. Given this dual task, this paper aims to identify if examiners from different disciplines predominantly take on the evaluator or the teaching role. We analyzed doctoral examination reports written for an Australian and Malaysian university from three major disciplines (Humanities, Sciences/Mathematics, and Commerce) (N = 30). Our results show that the majority of examiners predominantly play the evaluator role. While almost all examiners in this study provided assessment and feedback, summative assessment often prevailed, without any indications of the examiners' expectations and without any guidance for the candidate on how to address any critical issues. Our data indicate that individual preferences dictate examiners' choices for summative assessment or feedback rather than disciplinary differences or the institutional guidelines that the examiners had received from the institutions involved in this study. Longer examination reports usually contain more feedback than summative assessment, possibly indicating a higher level of examiner engagement. We argue that the role of the examiner in a doctoral examination is not only to evaluate but also to play a teaching role. This is based on the 'not-yet-finished' nature of thesis assessment, therefore requiring examiners to consider the examination process as a form of teaching. Providing the candidate with formative feedback will ensure that the gap between the candidate's current and expected performance is closed and that assessment for learning is realized in the examination process. The paper concludes with implications for the assessment practice of doctoral theses across disciplines and systems.

Keywords

doctoral examination; feedback; formative assessment

T08 Examiners' assessment criteria in dissertations and the learning outcomes of doctoral education

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Swedish dissertations are public, followed by closed assessment committee meetings that only report pass-fail votes. 166 external examiners from 72 doctoral dissertations were therefore anonymously surveyed for their views on pass-fail norms, scientific standard of theses and candidates and the academic independence of the assessed candidate. They were also asked to relate their assessment to the national learning outcomes for the PhD degree.

Scientific standard and academic independence were with few exceptions considered sufficiently strong to very strong. However, pass-fail norm statements varied strongly in quality from 1) qualitative demands on student performance, 2) demands on research output, 3) tautological statements, to 4) expectations of emotional responses among the assessors. This is much in line with Lovitts (2007) who investigated examiners norms in a range of academic disciplines. The paper raises the discussion whether examiners statements reflect how they think during dissertations, or, if dissertation assessment includes tacit norms hard to explicitly describe. The study further reveals a variation in 'visibility' of the various required national learning outcomes in the dissertation assessment meetings. This underlines the need for an improved PhD assessment process where some PhD competencies are assessed separate from the dissertation.

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Keywords

doctoral education; dissertation assessment criteria; learning outcomes

T09 Evaluating attainment and use of graduate attributes by doctoral graduates

Rachel Spronken-Smith, Romain Miroso

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In 2015 we surveyed 247 doctoral graduates about 18 months after their graduation. The graduates were from health science, science, humanities and commerce disciplines, with 136 responding (55% response rate). A section of the survey concerned current employment and the development and application of graduate attributes. Of the 134 responses to current employment, 72% were in full-time employment, with 17% in part-time employment. For the 112 who specified their jobs, approximately 71% were in academic positions including 21% in lecturing positions and 29% in postdoctoral positions. About 12% were employed as advisors, analysts or managers, and another 12% had positions as consultants or specialists. Ninety-two percent said their employment was at least somewhat related to their study.

Regarding development of graduate attributes, graduates indicated the highest ratings for development of research and written communication skills, with high ratings for willingness to learn, planning skills, problem-solving, independent judgement, academic rigor, analytical skills, and flexibility and adaptability. There were several attributes that graduates perceived were applied more in their workplaces, than had been developed during university, including teamwork skills, self-confidence and the skills to implement change. Conversely, a reasonably good match was noted between development and use in the workplace of oral communication skills, planning skills, problem-

solving, independent judgement, ability to be creative, a multidisciplinary perspective, flexibility and adaptability, a global perspective, cultural understanding and information literacy. The findings can be used to help tailor programs to better foster the development of graduate attributes to best equip doctoral candidates for employment.

Keywords

graduate destinations; graduate outcomes; graduate attributes; doctoral outcomes; employment

T10 International research training workshop

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Queensland University of Technology

Lucy Johnston

The University of Newcastle

Joe Luca

Edith Cowan University

Helen Marsden

University of Canberra

Sharon Scott

University of South Australia

Ren Yi

Macquarie University

Universities are placing an increased focus on international partnerships in research training. With this has come a rapid growth in demand for the development of non-traditional models for recruitment, delivery and management of research training to our international PhD candidates. This workshop will take a collaborative approach to discussion of how those arrangements are operationalized across the sector. Specific topics for discussion will focus on the development, delivery and management of:

- joint PhD programs;
- sandwich PhD programs (e.g. 1+2+1; or 2+2); and
- models to facilitate visiting international PhD scholars.

Participants will discuss how these arrangements are managed in their own institutions. The workshop will build on sector-wide benchmarking work previously undertaken by groups such as the Higher Degree Research Special Interest Group (HDR SIG) of the Australians Research Management Society (ARMS) and the former Managers of International Research Training (MIRT) group. However, previous involvement is not a pre-requisite, and participation by anyone involved in the development or management of these issues is encouraged.

Keywords

international research training; joint PhDs; higher degree research; sandwich programs; visiting PhDs

T13 Making family visible: International doctoral students with accompanying family members

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Niusila Eteuati-Faamanatu**

Victoria University of Wellington

This paper focuses on the curious invisibility to universities and policymakers of the significant group of international doctoral students who are accompanied by partners and children. This invisibility is juxtaposed against the growing economic importance of international students to Australia, Canada, New Zealand, the United Kingdom, and the United States of America. We suggest that an outdated construction of the international student as young and carefree has contributed to the pattern of invisibility apparent in data collection systems and in the research literature. We appropriate a formula from NAFSA to estimate numbers of accompanying family members for those five countries, and then proceed to examine immigration, education, and health policies pertaining to family members.

Keywords

international doctoral students; family members; economic impact

T14 The doctoral journey away from home: how universities can best support international candidates

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Completing a doctoral thesis is not an easy task; trying to accomplish this in a new country requires determination and perseverance from international doctoral candidates. Issues such as having English as an additional language and adapting to a new academic culture can bring feelings of anxiety and doubt about one's academic skills (Kiley, 2009; Okai, 2014; Pansiri, 2009). In 2014 and 2015 a total of 93 candidates attended a University of Auckland program aimed to assist them create a peer support network and make a successful start on their doctoral journeys. We wanted to discover if facilitated discussions about supervision helped candidates understand how to improve relationships with their supervisors; investigate whether or not the personal connections fostered in the program were helpful in overcoming feelings of loneliness; and examine how practicing communication skills improved candidates' self-confidence. All candidates were invited to participate in this project; they completed an online questionnaire and participated in focus groups. The findings identify how universities may best assist international candidates navigate the doctoral journey with more confidence.

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Keywords

Peer support; Communication skills; Supervision

T15 When worlds collide: exposing hidden elements and transforming partnerships in graduate education

Sarah Jansen, Linda Kalejs

Monash University

Worldwide, there is recognized need for quality and diversity in doctoral education, to equip graduates with skills to enable future employment in increasingly global and competitive business environments. In the Australian context, debate has led to subsequent funding and policy changes at government and institutional levels to reshape doctoral education strategies and programs. Historically libraries have had little participation in university governance or curriculum reform, and have existed on the periphery of graduate education as adjunct services. In contrast, Monash University Library has established itself as a leader in the development of research and academic skills across undergraduate and postgraduate curricula. As such, when new strategies and structures were in development to remodel doctoral programs at Monash, the library was at the table. This fortuitous collision of worlds, political, educational, across faculties and University divisions, had the underpinnings of a learning organization (Senge, 1992). Dialogue transformed understanding about university sectors that have impact and collective interest in the graduate researcher experience. The library was recognized as having informed experts in education and curriculum development, research data, intellectual property, publishing and impact metrics, through a culture of practice-led research. Analogous to 'giant impact theory' the library was an impactor, with significant and different 'isotopes' (expertise) to contribute to the graduate research space. This conceptual paper presents a case study of tidal evolution in doctoral education in a rapidly changing Higher Education context; the library now positioned as a key stakeholder adding depth and breadth to faculty and centrally administered doctoral education.

Keywords

doctoral education; research skills; library; learning organization

T16 Are supervisors more 'hands-on' if they have secured the funding of the research project?

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In many European and Australian universities, doctoral supervisors are under a growing pressure to generate funding from external sources and as a result to deliver timely completions. Given the pressured times in which supervisors now have to work, we hypothesize that supervisors of external funded projects risk applying a more 'hands-on' approach to supervision. We tested the hypothesis in a large-scale survey based on an online questionnaire. Our sample was 1,780 doctoral students enrolled at a large Scandinavian university representing arts, social, health and natural sciences. Response rate: 79%. We used ANCOVA to analyze association between external funding and hands-on supervision controlling for the effect of disciplinary background. Overall, we found that doctoral students in externally funded projects experienced more hands-on supervision compared to students who were not externally funded. When controlling for disciplinary variation, the correlation between external funding and hands-on supervision was only statistically significant in the health sciences. As expected, hands-on supervision and external funded projects were more prevalent in the natural and health sciences compared to arts and social sciences. Finally, students who experienced more hands-on supervision reported positive progress in their study as well as satisfaction with their supervision. However, they also reported significantly reduced feelings of independence and self-efficacy. In conclusion, our study confirms a link between funding models and supervision. It also raises concerns about the degree of supervisor control over students' projects. Hands-on supervision may not be inexpedient per se, but too much supervisor control may crowd-out students' independence.

Keywords

supervision practice; hands-on; funding models

T18 Getting Cinderella to the ball: Using international collaborative research training as a strategic tool (Pecha Kucha presentation)

Mary Goodman

RMIT University

University staff, both academic and professional, generally agree that research, research training and internationalization are all important to a university's success. That said, the magnitude of each element's importance relative to the other is often disputed in practice. There are a great many benefits to using research training (the Cinderella of this story) as a primary strategic tool for enhancing research, and developing international partnerships. These benefits become evident and can be obtained once several common misconceptions (the Ugly Sisters) about university research and international operations are cleared up. Based on two years of experience in re-framing RMIT University's approach to international collaborative research training, this

presentation addresses some of the misconceptions about research training in relation to international and research strategies and proposes the top three factors in the successful management of research training collaborations.

Keywords

research training; joint PhDs; research strategy; international collaboration

T19 The destination decision of Asian postdoctoral trainees: Advice from Asian-born, western-trained bio scientists

Anju Paul

Yale-NUS College

Postdoctoral training is now deemed essential before a PhD recipient in the natural sciences is considered ready to embark on a career as an independent scientist in academia. Most postdoctoral trainees are concentrated in the US and other Western countries though, in recent years, several Asian governments have introduced programs to expand and/or enhance the postdoctoral training programs available in their countries as well. But is pursuing a postdoctoral fellowship in Asia, as opposed to the West, seen as an acceptable alternative for aspiring Asian scientists? What factors determine their destination decision and how? Drawing from interviews with 82 Asian-born, Western-trained bio scientists who have since returned to Asia to work in either Singapore, India, China, or Taiwan, I find that despite significant improvements in the bioscience research and education infrastructure in Asia at the doctoral level, many interviewees continued to encourage their best students to spend their postdoctoral years in the West, and particularly the US. They do so partly because of the structure of the scientific fields in Asian and Western countries, but also because of what they saw as a more creative and critical approach to scientific research in the West.

Keywords

postdoctoral training; Asian science; destination decision; Asian universities

T20 Many birds, one stone

Kelly Farrell

La Trobe University

More doctoral candidates should undertake reciprocal peer review of teaching because the experience can contribute to making them not just better teachers, but better colleagues, communicators, and academic leaders. That is the proposition of this Pecha Kucha. By nature, reciprocal peer review requires an attitude of openness and a willingness to lay methods and personal style out on the table for another to critique. Indeed, it's an attitude that many who have been teaching for decades find difficult to adopt. But the liminal position of doctoral candidates within the power and community structures of the university, combined with their already-openness due to the imperative of the

frequent submission of work to supervisors for critique may be reasons why some of those in a teaching-development program at La Trobe University stepped up to the challenge of structured and supported review of each other's teaching with verve and courage when their relative lack of experience might have suggested they balk. In opening their classrooms and giving each other feedback on their teaching, they enacted active collegiality and leadership and gained experience in the delivery of a delicate communication that requires respect and sensitivity: that to peers. Could engaging more doctoral candidates in the experience of peer review contribute to a more open, collegial and supportive academic workforce of the future?

Keywords

peer review of teaching; collegiality; academic workforce; teaching development; leadership

T21 N7+1: A systematic paperless process for developing HDR literature reviews using NVivo

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Sarah Booth, Bill Allen

Edith Cowan University

Janeen Lamb

Australian Catholic University

The aim of the N7+1 project is to design learning that enables HDR students to complete a literature review, and thus their Higher Degree by Research (HDR), in a timely and successful manner. Most contemporary HDR studies require a literature review, which assists the student in understanding what is known about the topic and identifying where their research could contribute to new knowledge by filling in gaps and building onto existing research. NVivo is a qualitative analysis software program that can handle large amounts of text, and can be used to develop a literature review that is more systematic, time efficient and paperless. The project team has developed a seven step process that could be utilized by contemporary HDR students, in all disciplines in the higher education sector. Supervisors should encourage HDR students to utilize this seven step process to conduct a literature review because it enhances the generic skills of HDR students, for example, research, problem solving, organization, applying technologies, and information literacy; and better prepares HDR students for their future career progression, for example, in academia, government, industry and business. In addition, the seven step process supports universities to meet their completion targets, which benefit from timely HDR completions in the form of future funding. The seven step NVivo process is particularly relevant to regional universities where the attrition rates of HDR students are higher; and where the progress and completion rates are lower than the rates at city-based institutions.

Keywords

HDR enabling support; NVivo software; literature review development

T22 The academic self: Attending to student experiences of the research process

Michelle Jamieson

Macquarie University

Conventionally, postgraduate research training focuses on developing competency in academic literacy, research methods, written and oral communication. This skills-based approach typically involves organizing courses and workshops in, for example, thesis writing, journal publishing, and reviewing literature. Similarly, candidates are encouraged to consult research writing manuals that offer a variety of templates, written examples and sample texts. While such structured forms of assistance are important, it is nevertheless becoming evident that a sound research practice involves more than a mastery of academic skills themselves: it requires teachers and students to address the 'muddier' experiences that come with putting these skills into practice. In scholarly literature on this subject, it is generally accepted, though under-acknowledged, that the experience of doing research raises issues related to self-perception and identity, acculturation into the research context, and general well-being. This is confirmed by my own experiences working as a learning advisor. My discussions with masters and PhD candidates about gaining disciplinary expertise, working with their supervisors, presenting their research or managing their workload are frequently accompanied by conversations about how to be resilient despite feelings of fraudulence or the imposter syndrome, fear of failure, procrastination and perfectionism. This talk offers a critical reflection on these issues by discussing a number of workshops designed to bring students' experiences of the research process into conversation with skills-based training.

Keywords

academic identity; research training; student experience; postgraduate workshops

T23 The imposter syndrome explained

Hugh Kearns

Flinders University and Thinkwell

Why is it that many successful people often feel like frauds? That they haven't earned their success. That it was due to good luck or circumstance. Or that the next time they will be found out. In psychology this is described as the imposter syndrome and it was first described in 1978. It is common in most spheres of life but it was originally described in academia and this session explains why it can be particularly acute for researchers and research students. Research by its nature is uncertain, rarely turns out perfectly and is very likely to be criticized; a set of circumstances that can lead to a lot of self-doubt and questioning about one's ability. Drawing on the best psychological research over the past 40 years and a recently published book on the topic we can see how the imposter syndrome develops, how people maintain their imposter feelings despite the evidence and the impact it has on them

and their research. Finally, the session looks at what individuals, researcher developers and universities can do to reduce the impact of the imposter syndrome.

Keywords

imposter syndrome; fraud; self-doubt

T24 Visualizing the doctoral research process

Kwong Nui Sim

Victoria University of Wellington

Russell Butson

University of Otago

Ideally, the completion of any doctoral program requires a fundamental knowledge of the research process (e.g., preparation phase, literature review phase, fieldwork phase, analysis phase and writing phase). An understanding of this research process is a matter that directly affects the outcome of the end product (the dissertation) as well as the PhD student's research practices in their later phases of their academic development. It is assumed and expected by academic staff that PhD students are aware of this process prior to undertaking doctoral research (e.g., Masters). There are, however, limited studies about PhD student readiness concerning doctoral research. This paper aims to contribute to the literature in this emerging area by discovering the manner in which nine PhD students approached doctoral research. The students, at various phases of their doctoral study and from different discipline backgrounds, were asked to illustrate, through diagrams, the processes involved in their doctoral research. The student participants were then invited to discuss their understanding and perceptions of the processes involved in doctoral research as illustrated in their diagrams. The preliminary analysis indicates a set of chaotic representations of the process: a) Linear vs. Non-linear; b) Traditional vs. Non-traditional; c) Simple vs. Complicated. In addition, the student participants exhibited diverse styles of presenting the process of carrying out doctoral research: 1) the way they started their research; 2) the language they used to describe the process; and 3) the linearity and complexity of their doctoral research. The paper concludes with a number of important insights with regard to the understandings doctoral students exhibit regarding the doctoral process.

Keywords

best practice; doctoral research; participative drawing method; PhD student; supervision

T26 How Cognitive behavioural coaching can help doctoral students to complete on time (and enjoy the experience more)

Maria Gardiner

ThinkWell

Many doctoral students struggle with doubts about their ability to complete their thesis. This may be due to many factors, including a non-university family background, worries about their abilities or having excessively high expectations of themselves.

Regardless of the cause, doubting whether you can complete a PhD and lacking confidence in your abilities can significantly affect completing the thesis. Thirty years of the best research in psychology has shown that it is possible to change doubts that can get in the way of us achieving our full potential. It is possible to change the beliefs that underpin our behaviors and consequently our successes. Despite there being an incontrovertible evidence base for how to improve our thinking and therefore our behaviors, the skills required to do this are not readily available to those wanting to maximize their performance. This presentation will be a hands on demonstration of how beliefs about self can impact on performance, particularly in relation to the completion of a doctoral thesis. It will utilize the latest research and practice in cognitive behavioral coaching (CBC) and show how this can be applied to the PhD experience. In particular, it will show how doubts impact both completion of the PhD and whether doctoral students have a positive experience during their candidature.

Keywords

cognitive behavioral coaching; completion rates and times; doubts and confidence about the PhD

T27 The planning and implementation of a two-phase mentoring program designed to meet the changing needs of PhD students

Stephanie Conos, Keely Bumsted O'Brien

Walter and Eliza Hall Institute

At the Walter and Eliza Hall Institute of Medical Research, PhD students benefit from formal programs addressing academic needs. Our mentoring approach has been informal, with students mentored by their supervisors and supervisory committee. Because mentoring benefits all aspects of career development, we introduced a formal student-mentoring program. To identify student's mentoring needs, we surveyed and interviewed 130 PhD students. The online results indicate that 50% of students wanted a forum to raise concerns about their supervisors and 70% desired a forum to raise personal issues. The targeted interviews indicated that supervisory committees provided adequate academic support, but no student identified a committee member as a personal mentor. Based on these results, we designed a mentoring program divided into two phases: peer mentoring (student-student) and career mentoring (postdoc-student). Peer mentoring feedback indicated that students feel welcomed to the institute and now have a forum to ask procedural questions. The peer mentoring was successful and will be continued next year with no changes to the format. For the career mentoring, students discussed career pathways with postdocs at a networking event. Twenty percent of students who attended this event gained a postdoc mentor, which was less than we anticipated. Feedback indicated that facilitating interactions was more useful to students, compared with finding a mentor. We will pursue a group mentoring approach, by running biannual networking events. From a broad perspective our mentoring program was successful and achieved the goal of providing a supportive learning environment for students.

Keywords

mentoring; career development; doctoral education; the student experience; peer support

T28 Networking and Professional Development for Research Training Managers

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Ren Yi

Macquarie University

Margaret O'Byrne

The University of New South Wales

With the creation of the Australasian Research Training Network (ARTN) in September 2015, there are now three main avenues for research training professionals to engage with professional development and networking opportunities. These are:

- The Australian Council of Graduate Research (also known as DDoGS);
- The Higher Degree Research Special Interest Group of the Australasian Research Managers Society (ARMS); and
- The Australasian Research Training Network (ARTN) which also operates under the auspices of ARMS

This Pecha Kucha will introduce delegates to the three groups. Guidance will be provided about the appropriate group(s) for people to join, about there will be discussion about the opportunities that affiliation can provide.

Keywords

research training network; DDoGS; special interest group; networking; professional development

T31 HDR professional skills: shifting perceptions, changing directions

Sally Purcell

Macquarie University

Like many universities worldwide, Macquarie University has recognized the need to provide HDR candidates with opportunities to build professional skills to enhance their employability and capacity to make informed career decisions. Whether candidates are planning to pursue an academic career or other employment opportunities, they need to be competitive. Higher Education institutions in Australia are well placed to ensure that HDR graduates develop high levels of professional skills with an understanding of Australian and international employment opportunities. However, there are challenges in achieving the necessary shifts in perception: The Australian Higher Education sector needs to embrace the validity of PhD graduates seeking other career paths, and 'industry' needs to recognize that PhD graduates can make

valuable contributions to the success of organizations as they enhance Australian innovation and global competitiveness. HDR deans, managers and other staff involved in the development of HDR Professional Skills programs share similar challenges including:

- engaging HDR candidates and supervisors,
- overcoming resistance to change,
- broadening perceptions of success, and encouraging employers to recognize the value of employing PhD graduates.

This Pecha Kucha will present how Macquarie University's newly established MQ Professional Skills Program is responding to these challenges and lessons learned thus far.

Keywords

HDR professional skills; employability; career development

T32 The scholarship of doctoral education: Influential literature and prominent scholars

Alistair McCulloch

UniSA

During the development of a larger research project on the disciplinary status of doctoral education as an area of study, it became apparent that part of the evidence-base for that project was missing. This related to data on the presence of leading scholars and an established body of literature, both of which feature strongly in the literature on the nature of academic disciplines. To try to address this gap, a survey of individuals actively engaged with the academic scholarship of and research into higher degrees by research (doctorates, Masters by research, research degrees) either as a researcher, a manager, a practitioner or someone who works in some other capacity with research degree students was undertaken. Respondents were sought by sending invitations to participate to members of online communities (e.g. Jiscmail email discussion groups) and via conference attendance mailing lists where the focus of the group or the conference was doctoral or research education. The first question asked what literature those involved in research into the field regarded as being 'the most influential and important'. The second, 'which scholars are regarded by the broader community as being the most influential in the field?' In addition to the two questions, respondents were asked to indicate the part of the world in which they were currently based or working to try to determine if there were geographical differences in responses. This paper presents the results of that survey and seeks to draw conclusion as to whether or not doctoral education constitutes an academic discipline in its own right.

Keywords

doctoral education; literature on doctoral education; leading scholars in doctoral education

T33 The abstract art of teaching postgraduate writing

Danielle Clode, Jeri Kroll

Flinders University

Supporting written communication skills for the research higher degree cohort is of growing concern for most Australian universities, particularly with rising enrolments of international and non-English speaking background students. Flinders University has recently instituted a postgraduate communication skills topic to address this growing demand. It caters for research Masters and PhD students across all faculties, raising the challenge of teaching across disciplines. This paper explores our preliminary observations of disciplinary differences in writing styles. We use the four-step abstract writing tool to investigate approaches to exposition and research planning. This tool, which requires students to answer questions relating to the background, methods, results and implications of their research, was originally developed to assist science students but has proven useful across all disciplines. Students undertaking experimental, quantitative studies (such as many science students) typically overemphasize their methods and results while students from more qualitative or discursive disciplines (such as humanities and some social sciences) tend to overemphasize introductory sections. Thus science students often focus on the specificity of their research and need assistance expanding their writing towards the more general and broader issues of significance and impact. Humanities and some social science students, by contrast, often need more assistance narrowing their scope to an achievable and practicable goal. An understanding of these discipline-specific writing patterns can assist in the better targeting of curricular material and pedagogical approaches in a cross-disciplinary context for communication skills training at the research higher degree level.

Keywords

academic writing; abstracts; communication skills; cross-disciplinary education

T36 Knowledge exchange training for the next generation of health researchers

Christina Hagger, Amanda Carne, Lynsey Brown, Jodie Oliver-Baxter

Primary Health Care Research & Information

A knowledge exchange (KE) mindset sees value in research as a public resource. It is a dynamic way of undertaking research that looks for a societal return on investment. Researchers with a KE mindset understand the complexity of the world beyond academic circles. They have a systems view that understands research is only part of the answer for complex societal issues. While effective researchers develop KE attitudes and skills over the length of their careers, they are infrequently taught in Research Higher Degree (RHD) studies. There is a groundswell

to remedy this gap. The Australian Qualifications Framework standards require all RHD graduates to meet criteria for application of their knowledge and skills. The Council of Deans and Directors of Graduate Studies Australia has identified a framework for the doctoral experience which resonates with the need for a shift to pedagogic practices of the PhD to enhance KE. A national workshop was piloted for emerging researchers with the aim of activating KE attitudes as well as practice changes. Results indicate 26 RHD students and early career researchers in primary health care participated in the initial pilot. Over 60% indicated their supervisor had recommended attendance. All (100%) would recommend the workshop to peers. Preliminary data, using the Theory of Planned Behavior (a motivation theory), indicates intention to engage in KE behaviors was sustained over a four-month period. An alumni network was commenced. The workshop was expanded in 2015. Normalization Process Theory provides a conceptual framework to consolidate desired shifts in culture.

Keywords

knowledge exchange

T39 A case study in awesome: The Flinders University Paleontology Society

Samuel Arman

Flinders University

Many components of an ideal PhD environment such as good relationships, collaborative projects and creative endeavors can be fulfilled by the utilization of student societies. These groups provide a means to participate in projects that often fall outside of a normal PhD stream, but add enormous value to the PhD experience. Projects can be vague, whimsical and often poorly thought out, and this dynamic structure makes the outcomes unpredictable. In this way they serve valuable roles for the PhD student. They can give lessons in planning, funding and undertaking a project outside of the high pressure formal research structure. They improve social interactions with colleagues, and enable students to use their free time for positive outcomes while minimizing the eternal 'I should be working' guilt. Here, I present a case study of the Flinders University Paleontology Society (FUPS). Over the past 8 years FUPS has grown from a loose group of paleo-nerds to a 100+ member society from a range of backgrounds. This has enabled us to learn from fields not associated with formal research, while introducing many to paleontology. We have run a huge number of collaborative and independent field trips, as well as on campus activities and a much loved journal 'BEER'N'BONES'. The combined hours of assistance provided to Australian Paleontology through FUPS are incalculable, but number the thousands and have certainly assisted in some projects, as well as completing some in their entirety.

Keywords

student societies; research; citizen science

T40 Supporting and Developing PhD Supervisors and Principal Investigators impacts positively on the student experience

Judith Williams, Rachel Cowen

The University of Manchester

The research student-supervisor relationship is of paramount importance and within the UK we have undertaken national surveys for both PhD students and supervisors. 95% of Academics feel confident in supervising, whereas 81% students were satisfied with the supervision they received. Our aim was to determine whether supporting and developing supervisors had a positive impact on student experience. We developed PhD supervisors training either as stand-alone sessions or as part of structured training programs. Through the Centre for Academic and Researcher Development we bring in the views and opinions of other groups to inform training and learning. Supervisors are able to see the impact their actions have on the students themselves. Senior management buy in was essential, instigating policies and procedures to incentivize good PhD supervision. Work allocation models and performance enhancement schemes contain success measures reflecting completion data and student satisfaction. We have supported 332 new supervisors through the New Academics program (integrated training) and 421 supervisors through our supervisor update sessions. Over the last 2 years we have seen a 5% increase in student satisfaction, evidenced through the national Postgraduate Research Experience Survey, placing the University of Manchester in the top 6 Russell group Universities. Students at University of Manchester rated their satisfaction with their PhD supervision 6% above the UK average. We have identified the importance of an integrated approach to training for PhD supervision. Linking training to an accredited program, probation and promotion, work load allocation and performance metrics has had a positive impact on student experience.

Keywords

supervisors; student; experience; impact

T41 More than agency: An analysis of the research supervision development in the South African higher education audit reports

Puleng Motshoane

University of Johannesburg

The South African higher education system is faced with a challenge from multiple stakeholders to increase the number of doctoral graduates (NRF, 2008). Likewise, the National Development Plan (2011) specifies the need to increase the number of academics with PhDs, with the aim of having enough supervisors to meet the growing need for more doctoral graduates as well as replacing the aging community. Since the South African higher education system is differentiated, institutional histories need to be taken into account when redressing the problem of doctoral shortage. A lot of research

has been done on the supervision of doctoral candidates, mostly however, on student and supervisor relationships, and little on supervision development. This study focuses on the often neglected role of the institution and provides insights into the kind of institutional structures, research culture and ethos, which should support the supervision development process (Motshoane & McKenna, 2014). Between 2004 and 2011 all South African universities underwent a national quality audit. Postgraduate education was indicated as a concern. This study uses a qualitative method to look at the audit reports from 22 institutions, focusing on postgraduate supervision. Archer's analytical dualism framework is used to identify the emergent properties of structure, culture and agency (1995). It is clear from this analysis that there is a need for different kinds of support depending on the institutional type.

Keywords

doctoral supervision; supervision development; institutional culture; emergent properties

T44 Managing diversity in HDR thesis study groups

Laura Dickinson, Vittoria Grossi, Ron Peek, Maja Pejovska

Deakin University

Within the changing landscape of supervisor/student relationships, writing groups offer additional academic support. Fostering peer networks (Aitchison & Guerin, 2014) and building confidence for students from linguistically diverse backgrounds (Li, 2014), they promote learning as a collaborative and discursive practice (Maher et al., 2008). At Deakin, Thesis Study Groups (TSGs) – face-to-face across two different campuses and online – provide a place for diverse HDR students to connect, share advice, and develop academic language skills. To better inform existing HDR support practice, we reflected on our role as Language and Learning Advisers (LLAs) in TSGs during 2015. Drawing on these reflections, this presentation shares key insights about catering for linguistically and academically diverse HDR students in TSGs. Key learnings include that TSGs are more than just writing groups, balancing individual and common needs, while facilitating peer support.

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Keywords

diversity; HDR students; advisers; thesis study groups; online/face-to-face

T45 Developing doctoral students teaching capabilities SIG Workshop

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Beth Beckmann

Australian National University

The Developing Doctoral Students' Teaching Capabilities SIG was launched at QPR in 2014. Our focus is on issues related to doctoral students' experiences of developing their teaching skills while completing their studies.

The SIG is for anyone who recognizes the benefits of doctoral students having opportunities to develop their teaching skills and experiences during their candidature. These include personal benefits as students build their capabilities for future early career academic positions, and institutional benefits, as learning at all levels is more effectively supported.

SIG membership is open to all those interested in formal and informal pathways to help doctoral students develop their capacity to teach effectively and better support student learning. We welcome interest from doctoral candidates, research student supervisors, academic developers, and academics.

Session Plan

SIG Conveners will provide a brief report on SIG achievements over the last 2 years including the PhD Time-Bomb Symposium at QUT in 2015, and the launch of the new Doctoral Teaching Website in 2016. We are keen to explore member's different approaches to developing teaching skills while undertaking doctoral studies; the types of support offered by their institutions; and the perceived career benefits and challenges of developing teaching skills during the PhD. The roundtable will be an exchange of ideas on developing Doctoral Students' Teaching Capabilities, including actively exploring the opportunities and benefits for doctoral students who are teaching to gain internationally-accredited professional recognition. This short roundtable will conclude with a planning session to determine how best to continue to build the SIG.

Keywords

doctoral students' teaching capabilities; researcher development

T47 Fixing the Broken PhD?

Robyn Barnacle, Denise Cuthbert

RMIT University

In the last twenty years, the PhD has been subject to unprecedented scrutiny by government, regional and global policy agents, and industry-end users who contend that this

degree is no longer fit for purpose as it fails to meet the needs of those it seeks to serve. Contradictions abound in this space. We are told simultaneously that we have too many PhD's and their production should be curtailed; that we are not producing enough and that means must be found to produce more PhD graduates with greater efficiency; and that we need a different kind of PhD, one more attuned to the needs of end-users and whose graduates move seamlessly from the university to industry where it is hoped they will drive knowledge-based innovation and economic growth. Government, in particular, appears intent on fixing a broken PhD although hard evidence of how and why it is broken is hard to find. This paper investigates this contradictory space through a critical discourse analysis, arguing that there are two key factors driving these contradictions: a) assumptions underpinning the value of the PhD which are insufficiently examined; and b) limited empirical data on which to make assessments of the value added, for various stakeholders, by the PhD, that is, the graduates, the work they undertake, their employers, the universities which award them, and the governments which fund them. It goes without saying that efforts aimed at fixing the PhD should proceed after it has been determined how – if at all – it is broken.

Keywords

PhD; knowledge-based economy; value of the PhD; PhD graduates; graduate employability; government higher education policy; research degree outcomes; research impact

T48 Graduate teaching assistants: Adopting the deficit model of student learning by default?

Ian Brailsford, Anuj Bhargava, Larry Chamley, Michelle Glass, Judy O'Brien

University of Auckland

Graduate teaching assistants (GTAs) shoulder the burden of much undergraduate teaching, especially in large, service-level courses in STEM disciplines. GTAs are often close in age to their students. This typically results in greater approachability and rapport between GTAs and current students (Park, 2004) in laboratories and tutorials. Moreover, GTAs have recent experience of the realities of undergraduate study (including the conflicting demands of academic study and paid part-time work, continuous assessment and – for many students – studying in an additional language), something most course conveners have long since forgotten or never experienced. This paper presents the views of 20 GTAs teaching in the biomedical sciences of their students' academic and laboratory skills gleaned from focus group discussions. For better or worse, these new GTAs display a deficit view of students' academic abilities (Valenica, 2012). This paper discusses the implications for GTAs of this 'default' deficit model of student learning for their professional development.

Keywords

graduate teaching assistants; professional development; preparing future faculty

T51 Understanding collegial peer learning amongst doctoral students

Kim Brown

University of Otago

Often seen as an untapped resource, peer learning amongst doctoral students has much to contribute to doctoral education, including knowledge-sharing of research and institutional processes, social interaction, and enhanced study experiences. Peer learning can complement supervision practices and generic doctoral support with the benefit of timely responses to learning needs. Yet, peer learning amongst doctoral students tends to receive less research attention, despite academic support. By investigating collegial peer learning practices amongst doctoral students, we can gain greater awareness of how doctoral students address their own learning needs outside of formal mechanisms. I use social practice theory and methodology to focus on how doctoral education takes shape through patterns of activity and relationships. Doctoral students participated in a hierarchical card sorting activity, ordering descriptors of collegiality in terms of the importance of each to doctoral learning. Students' placement of cards implied aspects of collegiality that hold particular pertinence for doctoral learning. Preliminary findings suggest that doctoral students interpret networking as an important form of peer learning shaped by intellectual openness and collaboration. In conversations about peer learning, some students described their current practices as the journey of a lone(y) scholar; others engaged in networks that drew upon diverse knowledge and skills to enable peers. One such example is a group of students who are building a community of statistically competent peers by offering informal statistics workshops. Insights on student-driven practices can further facilitate collegial peer learning in doctoral education.

Keywords

collegiality; doctoral education; networking; peer learning; social practices

T52 The Doctorate as Product, Pedagogy, and Public Good

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Stellenbosch University

Sioux McKenna

Rhodes University

Cally Guerin

University of Adelaide

Barbara Grant

University of Auckland

The doctorate can be understood from multiple perspectives. Firstly, it is an entrance to a particular disciplinary community and as such is expected to provide a contribution at the frontiers of that particular field. The 'product' of the doctorate is the thesis which is required to document and demonstrate

the research capabilities and autonomy of the doctoral candidate. Increasingly, however, the doctorate is also being understood in terms of pedagogy. As supervision becomes more professionalized and there is pressure for increased output, the issue of supervision pedagogy is frequently being foregrounded, particularly in terms of academics' preparedness for the supervisory role. A less frequently articulated aspect is the doctorate's role in broader social justice agendas. The process towards doctorateness is characterized as a journey of becoming and the doctorate is the place where the world's cutting edge research potentially takes place. However, it is also where scholars can potentially contribute to fundamental issues of transformation, critical citizenry, environmental sustainability and national development. In this context the doctorate can be seen to have an agentic and advocacy agenda. This symposium will consider the ways in which the doctorate attends to all of these conceptualizations with a view to enriching our understanding of this advanced degree. It will bring together the voices of four academics engaged in doctoral education in South Africa, Australia and New Zealand. Each of the four discussants will make a brief presentation that will speak to the ways in which the doctorate can and should attend to these and other perceptions. A broader discussion with the audience will then take place based on provocative questions emerging from the discussants' contributions.

Keywords

the doctorate as a journey; the doctorate as a scholarly endeavor; the doctorate as a catalyst for change

T53 From apprentice to mentee: Changing patterns of PGR development and support

Anne Boulwood

Birmingham City University

The evolution of the twenty first century doctorate from traditional apprentice model to one that emphasizes skills development, has brought with it a number of challenges, not least in the field of researcher development. Over the years, the initial need for more explicit research training has been supplanted by a more generic approach to researcher development, driven by skill acquisition. Partly, this is related to the changing role of the PhD, which is no longer seen solely as the precursor to a research career, but rather as a qualification for employment generally. It is also a measure of the changing nature of research itself, which is now more outward facing, in terms of both collaboration and funding.

This shift in emphasis has involved different, and very advanced, skill sets. It is assumed that established researchers, by the nature of what they do, will have developed these attributes, and for many this is the case. For those involved in doctoral education, however, it highlights the wide range of abilities new researchers must seek to develop and the added pressures they face. This paper will explore various approaches to addressing these issues, including the relative roles of supervisors, researcher developers and fellow PhD researchers, and with

reference to my own research, will consider an alternative model that focuses on learning by doing. I will discuss a number of innovative projects, including case studies derived from these, and will share the insights I have gained as a result.

Keywords

doctoral education; researcher development; skills development; learning by doing

T55 The challenges of teaching a research higher degree communication skills topic at a central level

Dani Milos

Flinders University

Andrew Craig

Flinders University

In a research higher degree setting, candidates complete a discipline specific research degree administered at the central level. Graduate schools often hold the responsibility of providing training to improve the generic and transferrable skills of the candidates. However, there are a number of challenges in providing such generic training to a diverse group of candidates with differing needs. This paper draws on the experience of 'COMS9001: Communication Skills for Research Higher Degree Students', a topic recently introduced by the Office of Graduate Research at Flinders University. The topic focuses on writing and communication skills in the context of work already being produced for candidates' own research, and provides practical skills in dealing with structure, argument, expression and grammar. This paper argues that a number of factors complicate the successful delivery of such a topic. First, candidates come from diverse disciplines. Their research areas, style of writing and structure of thesis may differ significantly based on these. Second, candidates are at different stages of their candidature, meaning that they need assistance with different tasks. Some may need to structure their research proposals, while others are at the final writing-up stage seeking assistance with editing. Finally, candidates have different backgrounds as well as writing and language skills. While some may need generic research and writing skills, others may need more intensive language support. These factors all affect the way the topic is delivered, and need to be addressed individually if all candidates are to receive the services they need. This paper summarizes how these factors have been managed in the topic so far, and makes some suggestions on how best to address these in the future.

Keywords

RHD candidates; RHD degree; Communication skills

T56 Measuring research engagement in Higher Degrees by Research

Harry Rolf, Denbeigh Armstrong

University of Tasmania

Australia's last place in OECD tables for firms collaborating on innovation with higher education or public research institutions is driving a national agenda to improve engagement and entrepreneurial activity by universities. Projects such as the Research Engagement for Australia (REA) framework (Cahill 2015) are assessing the viability of engagement metrics to encourage the translation of research outcomes into social and economic benefit. But these high level measures risk generalizing the complexity of engagement between universities and firms, for instance collaboration by Higher Degree by Research (HDR) students which is known to form important networks for inter- organization engagement. In this paper we measure the extent of collaboration by HDR students at the University of Tasmania. Using HDR student publication data provided by the University spanning 2008 to 2014 (n=3485) we map students' co-authorship networks and author affiliations in relation to a publications Field of Research (FOR) classification. Analysis shows extensive collaboration between co-authors with author affiliations spanning the globe. It reveals that collaboration varies considerably between Fields of Research, which raises questions about how much collaboration is unique to HDR students or built on pre-existing arrangements. Results highlight the value of a broader, systematic examination of collaboration by HDR students that goes beyond publication data and which involves multiple higher education institutions.

Keywords

collaboration; research publications; bibliometrics; co-authorship; HDR students

T57 The PhD life cycle: The inner game of research

Hugh Kearns

Flinders University and Thinkwell

Over ten years ago a colleague and I interviewed a group of PhD students and asked them to draw the life cycle of their PhD. These life cycles and stories went on to become a popular book: *The PhD experience: what they didn't tell you at induction*. This session builds on that research. During the conference participants will be able to use an app to draw their own PhD life cycle. These life cycles will be compiled to produce an aggregate life cycle which will be discussed in this session. This session will also discuss how this technique could be used by researcher developers to help graduate students prepare for the rollercoaster ride of the PhD.

Keywords

PhD life cycle; PhD experience; PhD survival

T58 The Uberisation of doctoral education: How self- help, outsourcing and markets are threatening to replace institutions

Claire Aitchison

University of New South Wales

Mark Carrigan

University of Warwick

Inger Mewburn

Australian National University

Pat Thomson

University of Nottingham

As national economies jostle for a greater market share of the research pie in ever more constrained global economic circumstances, old ways of doing and experiencing doctoral education are being transforming - often faster than, and independent of, institutional responses. While universities expend unprecedented amounts of time and resources on governance and managerial mechanisms to audit an increasingly precariat workforce, we argue that doctoral education is becoming Uberised. This rise of a freelance economy of alternative provisioning of doctoral education services is occurring rapidly and it would appear, largely unmonitored. Arising from both push and pull factors, as demand grows for support of doctoral candidature institutionally based, inward facing, local systems are being undermined by new, online, responsive alternatives. This up-ending of the status-quo has major implications for higher education research (Hall, 2015) and doctoral education. This symposium brings together experts to interrogate some of these trends. Claire Aitchison speaks about the marketization of doctoral writing support; Mark Carrigan discusses emerging tensions in how social media is being used by junior academics, highlighting how this is generating professional anxiety while also helping individuals cope with increasingly uncertain futures; Inger Mewburn considers the moves that universities are making – and not making – to address the digital literacy gap, and Pat Thomson discusses the formation of a self-managing, self-promoting, entrepreneurial doctoral researcher subject. The symposium will conclude with an open discussion prompted by a set of provocations around the themes raised.

Keywords

Uberisation of higher education; self-managed doctorates; social media and uncertainty

F02 The broaden and build theory and its implications for doctoral supervisors

Henriette van den Berg, Emmie Smit

University of the Free State

Frederickson (2000) proposes that positive emotions provide a broader thought- action process that influences the higher order cognitive functioning of individuals. She provided extensive evidence to demonstrate the impact of positive affect on the

ability to absorb and integrate information, to be creative, innovative and flexible, as well as a broader scope of actions. Negative emotions have the opposite impact resulting in a narrow attentional focus and crisis mode thinking repertoires that suppresses higher order thinking and impact negatively on performance in complex intellectual tasks. This theory holds significant implications for doctoral supervisors in terms of the importance of creating a safe, positive climate in which the student can build the necessary physical, intellectual and psychological resources to succeed. This presentation focuses on work done with a group of 23 inexperienced doctoral supervisors to develop effective supervisor-student relationships through a more holistic approach to the student's development, constructive feedback practices and actively looking for support resources that can alleviate negative experiences of students. The role of a postgraduate school in the support of supervisors and students are also highlighted. The findings support the value of actively promoting a positive work climate for students and the motivational impact that it has on students and supervisors.

Keywords

broaden-and-build; positive emotions; supervisor-student relationship

F03 Interrogating curriculum: An access and equity gaze on doctoral and postgraduate education across four sites

Tai Peseta

University of Sydney

Simon Barrie

Western Sydney University

Mark Barrow, Barbara Grant, Frances Kelly

University of Auckland

Jeff Jawitz, Lucia Thesen

University of Cape Town

Lisa Lucas, Sheila Trahar

University of Bristol

While scholarly discussions of the 'doctoral curriculum' have circulated for some time (e.g. Gonzales-Ocampo et al., 2015), there has not been a critical scrutiny of the doctoral curriculum in relation to access and equity. This may be because there is uncertainty about what is being explored by attending to access and equity. Is it the particular students who have traditionally been excluded from doctoral education? Is it a question of the specific knowledges these students bring to their learning and their efforts to include these in their research? Is it a focus on the institutional strategies designed to address access and equity? Or, perhaps it is an acknowledgement that the very cultures of higher education (and by implication doctoral and postgraduate education) intended to enact transformation have been complicit in the perpetuation of disadvantage and discrimination. We present preliminary findings from a research project that takes an access and equity gaze on doctoral and postgraduate education curricula across four universities. We highlight data from four institutional cases, and demonstrate

how these cases have provoked us to reconsider the complex ways discourses of access and equity play out in the curriculum scenes of doctoral and postgraduate education.

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Keywords

doctoral curriculum; postgraduate education; access and equity

F04 Lessons from professional writers for doctoral students and other academic writers

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Writing research projects frequently throws up significant problems for academic researchers at all stages of their careers. It can be a particular issue for doctoral students many of whom suffer from self-doubt and a sense of unknowing as they move into what can feel like the uncharted territory of producing a significant, original and lengthy piece of writing whilst at the same time finding their own voice within a specific genre. One of the ways we work with students and colleagues as they move through their process of discovery, which is what research writing is, is to scaffold both their work and the processes surrounding it and show them that they are not the first to have traveled this route and to have faced the difficulties and issues they are facing for the first time. Our paper offers a way of doing this through the experiences of (and reflections by) professional writers across a variety of genres. Using a framework derived from an examination of Virginia Wolfe's work (Jones 2007), we report an examination of a number of interviews with professional writers and extract from them common themes about, amongst others, the writing process and motivation. The interviews are drawn from the *Paris Review* (various years) and *Writers on Writing* (2002). These interviews, reflecting the variation among accomplished published writers, provide a source of inspiration for novice and not-so-novice writers to confidently engage with research writing.

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Keywords

research writing; doctoral student motivation; research student writing

F08 South Africa's comprehensive universities postgraduate provisioning challenges

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A significant change within the South African higher education landscape has been the institution of Comprehensive Universities (CUs) post 1994. While traditional universities were tasked to produce postgraduate research, the primary focus of comprehensive universities were to deliver vocational qualification opportunities within their geographical settings to grow the country's skills shortage. This would ensure that the majority of students completing their basic education schooling without degree passes would have access to higher education. Twenty-two years after South Africa's democracy, trends indicate that the Comprehensive Universities were not delivering on the mandate. Instead enrollment figures over a period of ten years (2005 - 2015) indicate a decline in their vocational program offerings, signaling a move towards these universities becoming more degree orientated in their program offering. Graduate output have been marked by high levels of failure and dropout (CHE, 2013), particularly at Comprehensive Universities. At the same time, they are criticized for not producing enough postgraduate research and for the comparatively low qualifications of their teaching staff. Recent protest action across the country have highlighted social justice challenges that poor and middle class students face within this democratic country. With Comprehensive Universities not adequately contributing to increasing vocational offerings, having poor completion rates and research output, their funding has become constrained. This has increased their dependency on government funding.

Keywords

comprehensive universities; traditional universities; vocational qualification; degree offerings

F11 Gender and the doctoral student experience

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Up to the end of the twentieth century, men's participation in doctoral education far exceeded that of women. As a result, early work on gender in doctoral education emerged from feminist perspectives, highlighting gendered inequities in participation rates and outcomes such as academic tenure. Over the last 20-30 years, however, women have pursued doctoral education in increasing numbers; significantly, women are now enrolling in and completing doctoral degrees at rates which approach and often exceed those of men (England, Allison, Li, Mark, Thompson, Budig & Sun 2001; Hoopes 2010; Jaschick 2010; Avraham 2013). Researchers have begun to

explore men's apparent (under)achievement relative to women as a 'crisis of masculinity' in doctoral education (de Vise 2010). This alleged reversal of the 'gender gap', while contested by some (Mastekaasa 2005), has widened the focus on gender as a subject for analytical consideration to include the doctoral experiences of both men and women. While participation rates and doctoral outcomes for men and women remain important indicators, they are alone insufficient for understanding gender in doctoral education in the new millennium. Growing doctoral student diversity, brought about by internationalization and widening participation initiatives, is beginning to prompt more nuanced considerations of gender, informed by a recognition of the ways gender intersects with 'race' and ethnicity, socio-economic status, geographic location, sexuality and (dis)ability. This paper reviews the literature on gender and doctoral education. It highlights the limits of an analytical lens based on the traditional man/ woman binary, and argues instead for more multi-faceted analyses that better reveal the complexities of gender as it relates to the diversity of students' doctoral experiences.

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Keywords

doctoral student experience; gender; equity; diversity; hierarchies; academia

F12 Why won't my student listen to me?

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This question, when asked by supervisors, is often answered as if it were simply a failure of communication. However, this explanation is too glib for several reasons. First, it relies on an understanding of communication as a simple transfer of information – if everyone took care with what they said and everyone listened to everyone else there wouldn't be a problem. Second, it problematizes the student, thus allowing supervisors to make them responsible for this communication problem. Thirdly, it ignores 'the micro context of relationships' (Kamler and Threadgold, 1996, p. 51), and 'the complex micro political factors that ... frequently disrupt rational processes' (Morley, 2004, p92) in PhD supervision. Explorations of the liminal space of PhD candidature conducted from the student point of view have led us to suggest that, having been problematized, perhaps the student sees that their only recourse is resistance. An early study of resistance in education (Giroux, 1983) critiques the Marxist idea that students are resisting reproduction, and extends it with a notion of student agency. Students resist, he suggests, because by doing so they actively take some power to themselves. As many supervisors still conceptualize their task as one of reproduction of scholars within the discipline, this also might be a useful way to think about what is called 'communication breakdown'. Although apparent 'failure to hear' may occur in spirited academic discussion between supervisors and students, we suggest, and will illustrate from examples, that there are several other reasons why a student may express agency through resistance, exercising what power they understand themselves as having in this relationship for reasons other than academic disagreement:

1. They do not want to or feel personally incapable of engaging in the work of developing the researcher/scholar – the personal accountability for their own ideas that is implicit in doctoral work.
2. They do not feel it is 'safe' or 'acceptable' to hear, as the discussion of ideas is taking them to places that may be personally and/or culturally and/or politically unsafe.
3. They cannot understand what they hear as their current intellectual foundation will not support them in engaging with their 'known unknowns' or beginning to determine their 'unknown knowns' - a position of 'true' ignorance.
4. They are unable to hear anyone (not only a supervisor) due to personal circumstances, physical or mental illness (themselves or family members).

Centering rather than problematizing the student and actively engaging with potential causes for resistance may assist supervisors who are feeling a student is 'deaf' to their well-meant suggestions.

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Keywords

PhD; student experience; supervision; agency; resistance

F14 Love and other catastrophes: Commitment in research

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Calls abound for researchers to develop capabilities making them capable of being – variously – ‘stewards of the discipline’, knowledge workers, innovators, research translators and, more recently, entrepreneurs. The notion that commitment and values have a role to play in research – and what it means to be a researcher – is not new. It is there in the ancient conception of philosophical inquiry as the ‘love of wisdom’ and is also recognized in contemporary researcher capability frameworks – such as that developed by the UK’s Vitae organization. Increasingly, however, conflicts and tensions are apparent between the various causes to which researchers are expected to commit. As others have noted, this raises challenges and contradictions for research educators and candidates themselves. One issue is that of the compatibility between traditional values in research and those informing the more instrumental objectives of policy makers. Values underpin policy objectives and the values themselves are rarely explicated, raising important questions. Is it possible, for example, to reconcile traditional scholarly norms and values with more contemporary demands for researchers to pursue research translation and other policy objectives? This paper explores these issues by looking specifically at the issue of commitment and values in research. Drawing on research from the sociology of science, this conceptual paper explores implications for PhD programs.

Keywords

PhD education; commitment in research; values in science; researcher capabilities; sociology of science; science studies; higher education policy

F15 Sources of stress in early-stage doctoral candidates

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University of Otago

Stress in doctoral candidates is of concern to both candidates and universities as it can affect candidate wellbeing, contribute to supervisory difficulties, delay study progress, and influence

both candidate experience and university reputation. Identifying sources of stress in PhD candidates would allow the University to plan and implement targeted support for doctoral programs. We report on the first findings from a longitudinal case study that sought to identify candidates’ experiences related to stress during doctoral study. Between January 2011 and March 2012 all candidates enrolling in a PhD at the University of Otago were invited to participate. The 212 volunteers were asked to complete an online survey every four months until finishing their degree. Two survey questions asked for comments – one about sources stress and another about their PhD experiences in general. Focusing on the comments provided during the first year of doctoral study, we performed inductive content analysis of participants’ responses to completed questions (n=152). Nine main sources of stress were identified, including (in decreasing frequency): time pressure, uncertainty, sense of belonging, social isolation, financial impact of study, workload, doubt regarding abilities or strengths, work/life balance, and engagement and effectiveness of supervision. Contrary to previous research, supervisory relationship issues were not the main sources of stress, with key stressors identified as time and financial pressures, uncertainty, sense of belonging and social isolation. Changes in main early-stage doctoral stressors may reflect the altered resourcing landscape of doctoral studies or ongoing changes in candidate profiles.

Keywords

doctoral education; doctorate; graduate education; doctoral experience; stress

F16 Symposium on reimagining intercultural doctoral education: Historical dialogues

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Australia faces complex challenges and opportunities in intercultural doctoral education. Indigenous students require improved engagement with research education in order to enhance the educational empowerment of their communities and deliver greater recognition of Indigenous knowledge. Migrant and refugee students require greater access to research training in order to maximize their social and economic participation in Australian society. International research students studying in Australia require value for the significant time and money that they invest. However, students from these groups often experience problems with retention; lengthy times to completion and some report experiences of assimilation and racism (Manathunga, 2014). Contemporary Western/Northern approaches to intercultural education continue to be heavily inflected by an ahistorical mindset that privileges Euro-American theoretical resources. Despite

decades of postcolonial and Indigenous research, Northern knowledge continues to dominate research practices and claim universality across time and space. This continues to disadvantage Indigenous, migrant, refugee and international students. Each of these doctoral student groups bring cultural, linguistic and intellectual resources which need to be more effectively drawn upon if Australia is to expand its research capability (Manathunga, 2014; Singh, 2009; Bunda, 2014; Qi, 2015). Intercultural doctoral education pedagogies must be developed that empower these students to incorporate their rich personal, cultural and epistemological histories into their research. Yet there are few studies that empirically trace the operations of history available for reimagining doctoral education. This symposium outlines the beginnings of a project designed to explore how history can act as a tool for critical reflexivity in intercultural doctoral education. The first paper establishes our argument that Anglophone universities need to develop a pedagogy of intellectual equality that actively draws upon the linguistic repertoire and intellectual resources of non-Western and Indigenous doctoral candidates. This involves not only enabling these students to mobilize their linguistic and theoretical resources in their own research, but also seeks to challenge the White, Western academy to genuinely democratize knowledge production. The second paper argues that an important key to developing this pedagogy of intellectual equality is a complex understanding of the enriching and problematizing operations of history in doctoral education. This paper, therefore, provides a critical analysis of the ways in which macro and micro historical methodologies enable us to trace the operations of personal and cultural histories in supervision and situate them within the macro histories of colonialism, decolonization and disciplinary knowledge production. The third paper focuses upon some examples of the role played by these macro and micro histories in Indigenous doctoral education. It examines the ways in which attention to micro histories enables previously silenced Indigenous histories to be acknowledged and to challenge dominant white Western representations of history. The fourth paper illustrates the operations of these macro and micro histories in international doctoral education. This final paper will especially focus on international research students' intellectual development in relation to their personal, multilingual and intercultural histories. It will examine major circumstances where their research development is strongly influenced by a pedagogy of intellectual equality for intercultural doctoral education.

Keywords

international doctoral education; Indigenous doctoral education; history; colonization; supervision

F17 Using an integrative model of supervision to explore 'supervisory team fit'

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Doctoral supervision has recently been re-theorised as integrative of various dimensions. This conceptualisation constitutes a move away from supervisor as key agent and discipline as primary context, to embrace a wider range of players, influences and trajectories. This in turn brings into play two very different, and often oppositional, management undertakings – project and process. The overall sense of the scope of supervision however, is that it is fundamentally product focussed and falls well short of attending to other dimensions of development. We questioned if this was less the case, and if supervision was more consciously integrative in practice-led disciplines. This paper draws on four supervisor cases in Fine Art to explore a nascent model of supervisory practice that acknowledges the development of the individual alongside the training of the researcher and the contribution and place of the researcher in reference to discipline as well as profession. However, none of the four supervisors talked about supervision in a way that suggested a substantial or intentional integration, even while acknowledging the complex expectations of practice-led research. The model has potential as a heuristic to better assist supervisors and students to articulate expectations. It can also be developed as a tool to explore and compare integrative practices across disciplines and determine if supervisory teams, taken as a whole, reflect a more complex and comprehensive pattern of integrative practice or 'supervisory team fit'.

Keywords

integrative model, supervisory practice, doctoral supervision, practice-led research

F18 Using professional teaching standards to evaluate good practice in HDR supervision

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The role of doctoral supervisor is one that carries responsibilities and makes specific demands on academics. Those new to the role may feel unsure how to approach the task, and while universities are increasingly providing 'training' for the academics responsible for guiding novice researchers through their doctoral studies, this provision varies across institutions and can range from the highly theoretical to a mechanical approach focusing on product, planning and review. In universities still developing their research culture, there can also be a lack of clarity regarding the purpose of supervision: is it teaching or research? While doctoral supervision involves skills and knowledge in both areas, I argue that supervision is indeed a form of teaching, and that the relationship between supervisor and supervisee is understood to be a pedagogical one (Brew and Peseta, 2009; Manathunga, 2010). In this paper I describe how I, as an academic fairly inexperienced in HDR supervision, applied a set of guidelines, developed from a professional Higher Education teaching standards framework, to my supervisory practice. Using narrative data from conversational interviews with one student, and excerpts from my diary, I explore the perceptions of the effectiveness of this approach for doctoral supervision.

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Keywords

doctoral supervision; pedagogy; professional teaching standards

F19 Enhancing research training through placements

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Several surveys have indicated that PhD graduates are increasingly unlikely to obtain an academic career, with nearly 30% of students considered finding an academic job unrealistic (Edwards, Bexley, & Richardson, 2011). As such, it is important that research students to consider a wider range of career options at an early stage of their studies and participating in activities to enhance their employability. The Council of Deans and Directors of Graduate Research Good Practice Principles (2014) include explicit reference to assisting candidates to develop attributes that will enable them to be competitive for and successful in, both academic and non-academic careers - characteristics echoed in the current ACOLA review of the research training system in Australia. At the same time, there is a growing need for research-qualified individuals to enter commercial enterprise. In the Employer Demand for Researchers in Australia report, 70% of employers surveyed anticipated their annual demand for researcher would grow over the 5 years from 2010, with the anticipated need for researchers outstripping supply over the next 10 years (Allen Consulting Group, 2010). To help prepare HDR graduates for careers outside academia, the UQ Graduate School has developed a program specifically designed to provide experiential learning through placements and internships. Placements are up to 30 days in length and are assessed against graduate attributes that focus on the development of key transferrable skills including communication, teamwork, leadership, and creativity. The presentation will discuss the development and challenges of integrating internships and placements into research training.

Keywords

internship; employability; transferrable skills; careers

F20 Doctoral Writing SIG with a showcase of innovative writing activities

The Doctoral Writing SIG is a space to share information and resources in order to build knowledge and skills around doctoral writing. The meeting is in two parts. It will begin with SIG business, and a report back on the DoctoralWritingSIG website. The second part involves a pecha kucha-style workshop where up to 10 presenters will share their favorite writing exercises. Activities may include 'classic' exercises that are adapted to various contexts, or new experiments that encourage writing. This is a practice-focused session, so the emphasis is on sharing how and why the activity works across different contexts. In this session we hope to illustrate the increasing diversity of approaches to developing doctoral writing, as well as enable participants to expand the materials in their own writing tool-box.

Keywords

doctoral writing; writing practices; doctoral pedagogies

F21 The role of Research in the Contemporary (South) African University

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This paper examines contestations and debates around the role of university, specifically in the African context. This involves a critical look at how the debates have evolved and have emerged in response to socioeconomic factors in many parts of the world. For Africa, recent colonial history and legacies of regime such as the apartheid government in South Africa continue to impact on the role and debates about university and their position in society. A major debate in South Africa relates to equity and quality of higher education with emphasis on redressing the under-representation of the black majority. However, there appears to be no common consensus about how this should occur and views on the role of the university vary. The university is expected to simultaneously develop critical citizens, produce research, and participate in community engagement. We argue that while the role of university has always and continues to be contested, the university's role in the development of researchers and production of research output remains a core function. But even in the area of research there are contestations in South African universities. Should all universities engage in research? Should research be a minor or major part of a university's profile? How much attention should be on research compared to other core functions? What kind of research should the university foster and reward? Using a range of statistical data, research literature and policy, we critically explore the extent to which research is a core function of the universities in South Africa.

Keywords

research production; production of researchers; university role

F22 Doctoral supervision practice models: Where to from here?

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The aim of this session is to present and discuss a framework for supervisor professional development, including aspects that could contribute to the skills needed in the current supervisory environment. Supervisors face a variety of challenges, and a central issue is how to best prepare and support them. However, an examination of supervisor professional development programmes across the sector indicates unevenness in their depth and breadth. While some universities offer comprehensive supervisor training, others focus on regulatory matters such as completions and progress reports. Of course supervisors must be aware of regulations, but there is also a need for more comprehensive supervisor preparation, particularly in such areas as research writing development. The research underpinning this presentation synthesised a range of literature about the doctoral curriculum, general professional development of higher degree research (HDR) candidates, writing as a mediating tool for academic development, and the consequent implications that all these factors have for supervisor professional development. Five key themes (with accompanying sub-themes) were identified and extended those proposed by Hammond, Ryland, Tennant, and Boud (2010). They include: regulations and compliance issues, developing an understanding of a doctoral epistemology, dealing with problems and issues beyond supervision, specific issues involved in the supervision of international students, and developing cross-disciplinary communities of professional practice. This presentation will describe composite elements of the themes and seek participants' views on how they could be enhanced and evaluated.

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Keywords

supervision practice; supervisor professional development; higher education

F23 Approaches to doctoral learning in contemporary contexts

Kylie Shaw

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In education generally there is a growing focus on developing 21C skills to enable school students to work in more transformative ways (Shaw et al, 2014). These skills are seen to be essential for future learning given that we are equipping the new generations of young people for the jobs of the future. In higher education there has also been a thrust towards delivering learning that will similarly develop such skills. However, it is well

documented that PhD students, traditionally trained for the academy, find it difficult to apply their expertise to real world organisations and develop career-relevant competencies (Porter & Phelps, 2014). Globally institutions are making more extensive use of coursework module delivery for doctoral students on-line, using researcher development packages such as Epigeum, Vitae, and MOOCs. There is growing emphasis world-wide in developing solutions such as courses on generic attributes, development of doctoral colleges or hubs, and integration of work placements into the doctoral candidature. However, some warn against a collective approach to researcher training, arguing that differentiation needs to happen at a local level in order to be effective (Salzmann et al, 2014). New ways of envisaging doctoral education are required as higher education moves towards more contemporary contexts. This paper explores approaches to the delivery of quality research training with a focus on the doctoral learner, applying a nascent framework of Innovative Doctoral Learning Practices (IDL).

Keywords

doctoral learning; graduate attributes; research training

F24 Reframing the PhD for Australia's future universities

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Sydney University

Jeanette Fyffe

La Trobe University

Joe Graffam

Deakin University

Alistair Kwan

Auckland University

Lee Partridge

The University of Western Australia

Universities are grappling anew with the question of how well the PhD is preparing graduates for the demands of contemporary employment, and as a consequence, are re-examining the scope of current 'curriculum' strategies to broaden the learning experience and outcomes of the PhD. When informed by what is already known about the effectiveness of current doctoral curriculum 'breadth' strategies in other education contexts, that re-examination takes on added import given the realities of completion time limitations and increases in student numbers. This paper presents the first phase of a new OLT funded project, which explores the preparation of future academics. The project adopts a conceptual methodology drawing on the idea of scholars as 'Stewards of the discipline' (Golde 2006) to re-examine the range of learning experiences that contribute to the PhD: the research project, its supervision, skills development strategies, and the disciplinary learning communities in which the PhD is situated. It identifies how re-working these learning experiences can more effectively achieve the desired PhD outcomes. Using the concept of 'stewardship' as an alternative framing for doctoral

curriculum, the session presents an analysis of innovative doctoral education strategies from five universities. Participants will be invited to contribute as co-researchers to the creation of the new curriculum framework through a reconsideration of their own practice.

Keywords

doctoral; curriculum; teaching; stewardship; PhD

F25 Coursework Masters: pillar for PhD?

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Many coursework Masters programs in Australia newly have research methodology units and a large research capstone as per the Australian Qualifications Framework Level 9 (AQF9), enabling them to be a pillar to support PhD study. Are these programs really going to provide students with the cognitive and affective skills needed for autonomous PhD study?

Some coursework Masters programs have looked to the Research Skill Development framework (Willison & O'Regan, 2007) as a way to conceptualise whole of program study for primarily professional degrees that satisfy AQF9 research requirements. This presentation will focus on this use of the RSD to imbue coherence in a coursework Master's program. Thus far findings developed by graduating Masters students through their capstone research include:

- If the RSD is used, it needs to be introduced richly in the first semester of the degree (Abdurrahman, 2015; Faheem, 2015)
- repeated exposure to the RSD does not guarantee understanding (Abdurrahman, 2015; Faheem, 2015)
- coursework Masters students need strong instructional guidance to deepen their understanding of the framework (Faheem, 2015).

As the RSD is used increasingly to promote Master's degree coherence by program teams in compliance with AQF9, the danger is that as academics come to understand and use the framework they may assume that students too will understand and embrace it. If used, the RSD needs to inform richly the building, stone on stone, of Masters learning with its research capstone to provide a resilient and beautiful support for Ph.D. studies.

Keywords

RSD; Masters degrees as pillar of PhD; AQF9

F26 PhD Graduates: Do they contribute to national development?

Marina Confait

Edith Cowan University

The Doctor of Philosophy (PhD) degree sits at the apex of National Qualifications Frameworks. The purpose of the degree is to develop students into specialist scholars and researchers, capable of pursuing careers in different sectors and contributing to society.

Doctoral degree holders constitute an important human resource for research, innovation and entrepreneurship. However, research indicates that this resource is not being used to the optimum for national development. Using a qualitative case study involving 53 participants, including 24 PhD graduates from a small island state, the presentation at the QPR conference provided an insight into the contribution of PhD holders to national development. It presented the results of a thematic analysis of questionnaires, interviews, focus groups and relevant documents, indicating challenges and strategies to maximise the contribution of PhD holders. The study considers the impact on national development when policies, support resources and institutional frameworks for utilising and remunerating PhD holders are absent. Study participants who returned to the country after completing a PhD articulated a lack of support and appropriate policy framework that influenced their contribution to help enhance economic outcomes, social progress and community development, as well as their own career progression. A summary of these issues were presented at the conference.

Keywords

PhD graduates, national development, national qualifications framework, thematic analysis, small island state

F27 Understanding of doctoral supervision in China

Ying Zhang

Australian National University

Despite its large population on doctoral graduates, China suffers from effective supervisors' shortages, especially in the universities, which are located in big cities within the project 985 group. Two reasons lead to this result. One reason is the number of Chinese doctoral students enrolled has dramatically increased, and more than 50% of candidates prefer commencing their PhD journey in the universities mentioned above. The other reason is that the majority of doctoral supervisors in these universities are only selected from the 'professor group'. So the number of doctoral supervisors is limited. As a result, Chinese doctoral supervision, especially in the universities located in big cities within the project 985 group, are receiving an increasing amount of attention by academics in the field of education. This paper reports on selected data from 39 individual interviews at a Chinese leading university in Beijing. The results indicated similarities between western countries and China as five-structure factors influence doctoral supervision. These five-structure factors are supervisor practices; supervisors' individual background; students' individual background; relationship between supervisor and students; and other members related to doctoral supervision. Two sets of sub-factors contributed specifically to the effective supervision of Chinese doctoral students. Firstly, group supervision resulting in TONGMEN, who are guided by the same supervisor, plays a vital role in the process of doctoral supervision in China. Secondly, PINDE education was very important to doctoral supervision within the Chinese context but is far less significant within western contexts.

Keywords

doctoral supervision; China; Project 985 group

F28 Can a doctorate be transdisciplinary?

Chris Riedy

Institute for Sustainable Futures

Researchers in the 21st Century are faced with many intractable, or wicked, problems that are not amenable to traditional disciplinary research techniques. Transdisciplinary research practices have come to the fore over the last decade as a response to such problems. In transdisciplinary research, participants from inside and outside academia work together to co-design research projects, integrate different types of knowledge and co-produce outcomes. These outcomes are typically of three kinds: an improvement in the situation or field of enquiry; new stocks and flows of knowledge; and transformative and mutual learning for participants (Mitchell, Cordell & Fam, 2015). At first glance, it seems unlikely that a doctoral research project could live up to this transdisciplinary ideal. As a solo research project, bounded by time and usually limited in resources, the doctorate provides little obvious space for the kind of broad participation and integration that characterizes transdisciplinary work. In this paper, I draw on the experiences of students and supervisors at the Institute for Sustainable Futures to argue that a doctoral research project can, despite these challenges, strive towards a transdisciplinary ideal. I document common strategies used to facilitate stakeholder participation, knowledge integration and broad outcomes in the doctoral context. I also outline the challenges to a transdisciplinary doctorate and propose additional strategies for overcoming these challenges, including: industry-based doctorates; cohorts of doctorates tackling problems from different angles; and alternative publication strategies.

Keywords

transdisciplinary research; industry doctorates; integration; co-design

F29 The PhD – no longer simply a research training ground for academics

James Arvanitakis, Lisa Hanlon

Western Sydney University

The challenges and opportunities that doctorate students face today are dramatically different than when the PhD was first introduced as an advanced research degree two centuries ago. Yet, for many universities, the approach for overseeing this student higher degree journey has not dramatically altered from the perspective that it is simply high-level research skills training. Increasingly students are walking away from academia: working in different government, non-government and private organizations as well as within higher education settings but in professional non-academic roles. With emerging research showing that up to 50 percent of doctoral graduates will not work as traditional academics, there is a need to reflect on the role of the PhD graduate in contemporary society. With this in mind, Western Sydney University has renewed and redeveloped its research training program with the aim to prepare research students for the disruptive and rapid

environment of today's world, by utilizing four key proficiency cluster skills of Creativity and Innovation, Resilience, Teamwork and Design thinking. The skills our students develop will both enhance their employability and address the University's strategic and internationalization agendas.

Keywords

student journey; employability; research skills

F31 Understanding the Graduate Research Experience through the Analysis of a Research Experience Questionnaire

Charles Lawoko, Helen Borland

Victoria University

Like most Australian universities, Victoria University undertakes an annual survey of its HDR candidates (called the Current Research Experience Questionnaire (CREQ)), to assess their views and experiences in the following areas: Skills Development, Supervision, Intellectual Climate, Infrastructure, Goals and Expectations, Process, Overall Satisfaction. Background data on candidates are also collected, including: gender, age group, student status (local versus international), language background, study mode, and their source of funding, as well as College affiliation and discipline area. In this presentation we will consider the results from in-depth analyses of the VU CREQ data and trends, across the various factors. Methods used to analyze the data are a combination of logistic/multinomial regression, principal components/factor analysis, decision trees, and text analysis. In particular, we will consider the relative importance of various factors against others, and the changes over time, and we will seek to demonstrate and explain why some factors may be more important than others, as well as discussing the role of targeted interventions in improving satisfaction.

Keywords

research degree candidates; student satisfaction; trend analysis; cross-sectional analysis

F32 Taking the accountability out of accountability groups for off-campus PhDs

Juliet Lum, Phil Benson

Macquarie University

Peer support and accountability groups have been proposed as a means of helping doctoral students in diverse situations overcome the isolation that they often experience. While support for distance doctoral students is usually mediated by online supervision, online peer support groups can also play an important role in enabling off-campus students to participate in the kinds of peer learning that are more readily part of on-campus students' lives, and to strengthen their identities as students of the institution. Peer support groups can also be unstable and it has been argued that they 'work best when participants are committed to offering support, constructive feedback and an

accountability structure' (Fisher 2012). In this presentation, we discuss a project involving three online accountability groups for off-campus doctoral students that were observed over a three-month period. Structures were set up for small groups to set goals and meet fortnightly via Skype to talk about their progress toward them. Narratives of the development of the three groups, however, showed three very different trajectories in which accountability did not always play a major role. We discuss the factors that helped sustain the three groups, and highlight the importance of the participants' agency in interpreting and renegotiating the accountability group framework to meet their own needs.

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Keywords

distance PhD students; accountability groups; peer support; agency in doctoral education; doctoral student diversity

F33 Cognitive behavioral coaching and its impact on goal setting and wellbeing in doctoral students

Maria Gardiner, Hugh Kearns, Kerry Vowles, Paul Williamson, Marika Tiggemann

Flinders University

This presentation will discuss a study that examined the effect of a cognitive-behavioral coaching program on goal setting and wellbeing in doctoral students. The study also aimed to investigate a proposed mechanism for the coaching, namely that the effect of coaching on wellbeing and goal setting would be in part due to factors such as perfectionism and procrastination. Participants were 308 Research Higher Degree students from six universities across Australia, who were in their second, third and fourth year of studies. Participants in the intervention group (N =108) volunteered to attend a coaching program, and the control group (N=200) consisted of 200 students who had never attended the coaching program. Outcomes were assessed using change scores for goal setting (goal specificity, goal proximity and goal difficulty), wellbeing (morale and distress), perfectionism and procrastination. Before the intervention, students in the coaching group were significantly lower on perfectionism and morale and were significantly higher on procrastination and goal proximity than those in the control group. Following the intervention, those in the coaching group showed significantly better improvement in morale and marginally significant better improvement in some aspects of goal setting compared to the control group.

Keywords

cognitive behavioral coaching; goal setting for doctoral candidates; morale and distress

F34 Coaching doctoral students – A means to enhance progress and support self-organization in doctoral education

Mirjam Godskesen

Aalborg University

Sofie Kobayashi

Copenhagen University

In this paper we focus on individual coaching carried out by an external coach as a new pedagogical element that can impact doctoral students' sense of progress in doctoral education. The study used a mixed methods approach in that we draw on quantitative and qualitative data from the evaluation of a project on coaching doctoral students. We explore how coaching can contribute to the doctoral students' development of a broad set of personal competences and suggest that coaching could work as a means to engender self-management and improve relational competences. The analysis of the participants' self-reported gains from coaching show that doctoral students experience coaching as an effective method to support the doctoral study process. This study also provides preliminary empirical evidence that coaching of doctoral students can facilitate the doctoral study process so that the doctoral students experience an enhanced feeling of progress and that they can change their study behavior in a positive direction. The study discusses the difference between coaching and supervision, for instance power imbalances and contrary to earlier research into coaching of doctoral students this study indicates that coaching can impact the supervisor–student relationship in a positive way.

Keywords

coaching; research education; PhD students; general competences; supervision; learning environments

F35 The lighter side of research

Hugh Kearns

Flinders University and Thinkwell

This session is a look at the lighter side of research; the strange things researchers say and do; the excuses we make; and how we lie to ourselves and others. It's a chance to have a laugh at ourselves and look at some of the best cartoons and sayings from social media and elsewhere. And it will be interactive. During the conference there will be opportunities for you to share your own funny stories and lighter moments with prizes for the most entertaining; for example, the best excuse for missing a deadline; weirdest research topic; funniest cartoon; best tweet; best rationalization for not getting a grant.

Keywords

research humor; research comics; mirth

F38 A national cross-institutional graduate program in climate science education

Melissa Hart

ARC Centre of Excellence for Climate System Science

Prior to the establishment of the ARC Centre of Excellence for Climate System Science (ARCCSS), climate research in Australia was lacking capacity and many students undertaking graduate studies in the discipline were lacking a breadth of knowledge and technical skills to fully reach their potential. Within ARCCSS an academic appointment was made dedicated to the development and implementation of a higher degree research program. Our Graduate Director has established a national cross-institutional climate science graduate program. Students are enrolled in one of the five ARCCSS universities, with many students jointly-supervised across institutions, including national and international partner organizations. The curriculum can be tailored to individual student needs, involves a blended learning and teaching approach, and includes recorded lectures, online resources and remotely delivered seminars, annual climate science winter schools, scientific paper writing workshops, technical training courses, professional development opportunities, and mentorship. Student numbers have more than doubled since the implementation of the program, with students coming from >15 countries. Demonstrable success of the program includes students who completing their degrees well within candidature, with publications in top journals and moving on to positions in top institutions around the world. This presentation will provide an overview of and insights into the establishment of the program.

Keywords

climate science; researcher development; technical training; cross-institutional PhD

F039 iPREP – a post submission industry engagement program enhancing employability of PhD graduates

Natasha Ayers

Edith Cowan University

The traditional view of the PhD as a pathway to long-term academic employment has become outdated as less than 40% of PhD graduates actually gain an academic job. For PhD candidates that have not had industry exposure, programs are needed to develop the skills and experience required to apply their research knowledge in a business setting. These programs also need to be attractive to industry to build long-lasting relationships that support innovation and knowledge exchange. iPREP (Industry and PhD Research Engagement Program) is an innovative initiative that helps PhD candidates engage and network with industry. The program is unique in that PhD candidates who have submitted their thesis for examination are given the opportunity to work in interdisciplinary teams with an industry partner on a 6-week project (with scholarship). iPREP was initially trialed at Edith Cowan University and was expanded

in 2015 as part of a collaboration between the 5 universities in Western Australia. So far 20 companies and 76 PhD candidates have participated in iPREP. Interviews with industry partners highlighted the value PhD researchers can bring to their organization. In addition, the PhD students reported that their employability has been enhanced by participating in iPREP. Longer-term evaluation of the program is being undertaken to determine the impact of iPREP for enhancing collaboration between the universities and industry.

Keywords

employability; industry; engagement; networking; innovation

F40 Student experiences and perceptions of additional employability training during RHD candidature: a longitudinal study

Paige Maguire

e-Grad School (Australia)

The e-Grad School (eGSA) is a joint collaboration of the ATN universities aimed at providing research higher degree students with additional employability training during candidature. This initiative is in response to a recognized training gap and the emergent need to provide graduates who meet the requirements of industry and non-academic employers. To date, eGSA has managed over 8000 enrolments via its online training model and currently offers modules in research and generic skills (e.g. Leadership, Project Management, and Research Commercialization) to ATN and non-ATN university cohorts. To investigate student outcomes of this training, eGSA recently undertook a longitudinal survey of its alumni to gauge perceived benefits in relation to student career goals and progression. Almost 300 students responded to the survey and answered questions relating to the skills they gained from the training, their perceptions of the training and any identified career benefits. Data will be presented that suggests most students want training in more than just their research discipline during candidature, the influence of supervisors on this training and that eGSA courses seem to be positively impacting the career progression and momentum of their alumni.

Keywords

research training; employability; student experience; skills; research degree outcomes

F41 Strategies to support HDR candidates develop a positive career outlook

Shari Walsh

Growth Psychology

Less than 50% of HDR graduates are employed in academia following completion of their research degree (Graduate Destinations Australia, 2015). Additionally, on blogs such as Thesis Whisperer, HDR candidates' discussions reveal

disillusionment and uncertainty regarding their post-doctoral career prospects impacts negatively on their psychological wellbeing and their research progression. As such, assisting HDR candidates to understand and develop skills for both academic and non-academic environments so that they can feel confident regarding their future is becoming increasingly important. While supervisors and research support staff may be aware of this need, they may lack the confidence or the skills to assist HDR candidates with their career development throughout the research degree (Hill and Walsh, 2010).

This session will assist supervisors and research staff to identify simple strategies enabling them to support HDR candidates career development. Based on workshops from the Resilient Researcher program, the session will highlight a number of activities which can be incorporated into the supervisory relationship and research process to increase HDR candidates' post-doctoral career confidence.

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Thesis Whisperer. www.thesiswhisperer.com

Keywords

career development; research process; HDR candidates

F42 The use of machine learning to analyze job advertisements for doctoral employability

Inger Mewburn, Will Grant, Rachael Pitt, Stephanie Kizimchuk

Australian National University

Hanna Suominen

Australian National University / University of Turku, Finland

The nature and extent of the demand for research capable workers, is a topic of intense concern locally and internationally. With around 60% of graduates in Australia finding employment outside of academia on graduation, PhD programs are under increasing pressure to be relevant to the contemporary workplace beyond the walls of the academy. However, as yet, there is very little research on exactly what industry needs are as of the discussion with industry results in recommendations based on anecdote rather than data. This study aims to fill this gap by analyzing a large data set of job ads to see what employers outside academia really want from graduates. This research builds on an exploratory study which analyzed job adverts for roles specifying a PhD as a required or desired criteria in academic roles (Pitt and Mewburn, 2014). By focusing on what is actually stipulated as required for these roles at the time of advertising them, an alternative picture emerges of what employers really want in PhD-qualified employees. This next stage will use machine learning to investigate (and, should

this project be successful, track) the demand for advanced research skills amongst Australian industry sectors. To do this we plan to systematically explore, annotate and catalogue job advertisements (drawn at first from Australia's largest online employment marketplace seek.com.au) advertising for highly paid knowledge workers. Data drawn from the SEEK database will be processed using language analysis and classification algorithms, allowing the development of a tool able to assess which Australian industry sectors are looking to hire researchers, and the skills they are looking for. This paper reports on the first phase of this project which involved building and testing a robust ontology for describing PhD graduate skills and its application to classify textual job ads retrieved from SEEK. Classifications of three content experts are compared.

By making this data visible to research students, research managers, businesses and government we can find ways to better connect Australian businesses with Australia's highly skilled research workforce and provide new directions for those engaged in supporting PhD students in their careers post PhD.

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Keywords

employability; research training; research careers; natural language processing; annotation

F43 Are doctoral theses changing over time?

Ian Brailsford, Liz Sowden, Brigida Figueira

University of Auckland

This poster presents longitudinal data on the length and chapter composition of 800 doctoral theses deposited at the University of Auckland between 2008 and 2015. Over this period, the doctoral statute has been amended to allow for more flexibility in the format of a thesis submitted for examination, such as the inclusion of creative practice and peer-reviewed publications. In addition, the funding mechanisms for doctorates in New Zealand have put a premium on candidates completing in a timely fashion. Given these two contexts we speculated that the length of an average doctoral thesis would be declining over time. One hundred doctoral theses – overwhelmingly PhD theses with a smattering of name doctorates – deposited in the University Library from each calendar year were randomly selected to assess: the number of pages; chapter composition; and inclusion of published papers within the thesis. These data were then correlated against academic faculty to tease out variations across the disciplines. Overall, our findings indicate that the doctoral thesis has remained relatively stable in length and chapter structure.

Keywords

thesis; structure; doctoral assessment

F45 Designing a Reflective Practice Skills Sheet for HDR Students and Supervisors

This poster showcases a reflective practice skills sheet, which has been designed primarily for the purposes of enhancing the reflective practice skills of Higher Degree by Research (HDR) students, enhancing the HDR student experience, and building the capacities of early to mid-career HDR supervisors. The benefits of HDR students engaging in reflective practice are multifarious. These include encouraging deeper learning and life-long learning; developing problem-solving skills, thinking skills and emotional intelligence; facilitating the assessment of competence and performance; promoting student well-being; and preparing HDR students for their career and future. The reflective practice skills sheet is a useful resource for HDR students and early to mid-career HDR supervisors, in all disciplines in the higher education sector. In particular, the reflective practice skills sheet supports HDR students to engage in reflective practice; and guides a dialogue between HDR supervisors and HDR students.

Keywords

reflective practice; student experience; HDR students; HDR supervisors

F47 Outcomes of an Australian PhD for Thai graduates

Joelle Vandermensbrughe

University of Canberra

This poster explores outcomes of Australian doctoral degrees for Thai students. The poster is based on interviews with 20 Thai participants who completed a doctoral degree in Australia. Participants were interviewed in Thailand, in their professional setting. The main outcome of the PhD was the title and the status attached to it. All participants obtained employment at senior level or were promoted to higher duties after completing the degree, simply because of the title. The PhD itself did not prepare them for such responsibilities. but they all developed confidence and learned to become independent while they lived away from home and managed isolated an unfamiliar environment. Outcomes also tend to depend on preparedness for studying and living abroad, maturity and the capacity for making connections. Only few participants had ongoing collaboration with the university they studied in. Only Thai students with supportive supervisors had been able to set up ongoing networks, which then led to collaborations.

Keywords

international education; doctoral degrees; outcomes of doctoral degrees

F48 Improving postgraduate administration support

Trevor Scaife, Mignon Jolly, Ian Cummings

University of Tasmania

In 2013, the University of Tasmania created postgraduate administration support positions to be based in the Faculties and Institutes. These positions (Graduate Research Administration Officers, or GRAOs) work closely with the central support services to provide more localized support. GRAOs are a local link between applicants, candidates, supervisors, graduate research coordinators and other administrative services. Two years on, we are able to provide an evaluation of this enhanced support service. Initial results in our disciplines of Humanities, Arts and Social Sciences (HASS, which includes Business and Law) will be presented. Our stakeholders, from applicants through to senior academic staff, believe the model provides improved relationships and experiences throughout the candidature life cycle.

Keywords

administration support; postgraduate support; HASS

W01 Doctoral candidates' understandings of, and approaches to research

Gerry Mullins

Formerly, The University of Adelaide

J.H.F.Meyer

The University of Queensland

Margaret Kiley

The Australian National University

Gina Wisker

University of Brighton, UK

Natasha Ayers

Edith Cowan University

Keywords

conceptions of research, approaches to research, threshold concepts in research, understanding research

Introduction (Mullins)

This symposium is about some of the most frustrating questions that bedevil both postgraduate supervisors and their students. How often do supervisors say to themselves: 'Research – they just don't get it! They are still thinking like undergraduates. They think it's just about collecting data. How can I get across what I want?' Postgraduate students may also be saying 'What does she want me to do? I thought I was doing it right. I thought I knew what research was, but obviously I'm wrong. When will I get the hang of it?' A strong line of research in Australia led by people like Dave Boud, Keith Trigwell, and Mike Prosser has been concerned with undergraduates' conceptions of 'learning'. A similar question about what postgraduate students understand by 'research' has puzzled us for the last 15 years.

However, this symposium is not just about conceptions of research but also about how shifts in that understanding occur—how more sophisticated conceptions of research come about—the development of Threshold Concepts in research education. Finally, subsequent papers in the symposium focus on the application of the Students' Conceptions of Research (SCoR) and the Threshold Concept paradigm to the concept of 'research' and about how these shifts might be facilitated.

This symposium also addresses several lines of research that are related in that they address the questions above and have been conducted by several of the same people. However, they are also different in that one line of inquiry addresses students' and supervisors' understandings of 'research' and the other looks at the processes by which students change their conceptions.

Original findings from the Students Conceptions of Research Inventory (Meyer)

Based on the results of an open-ended survey of research students' responses identifying what they thought research was (Meyer, 2001), an inventory titled the Students Conceptions of Research Inventory (SCoRI) was developed and administered to three independent heterogeneous samples; of postgraduate students-- n=154, n=224, n=251 (Meyer et al 2005, 2007). The findings from the studies, and from an additional study of a

homogenous sample of doctoral students (n=198) (Meyer and Halliday, 2007) are outlined in Table 1.

Over the past 15 years, the Inventory has been used by many researchers to help identify students' conceptions of research with an example being provided in the final presentation of this symposium

What are Threshold Concepts and how does the Threshold Concepts research apply to learning to be a researcher? (Kiley)

Meyer & Land (2006) argue that each discipline has its own threshold concepts, which need to be fully understood for more complex knowledge in the discipline. Originally there were five features of a Threshold Concept in that it was: Transformative; Irreversible; Bounded; Integrative; and (potentially) Troublesome. More recent characteristics include: Discursive; Reconstitutive and Liminality. Following the discipline-specific work on Threshold Concepts Kiley (2009) was applied the idea Threshold Concepts to learning to be a researcher. The Threshold Concepts that were identified in the original study were: Argument/Thesis; Theory; Research paradigm/Epistemology; Framework; Analysis, and Knowledge creation.

Of particular interest in doctoral education is the situation where a candidate is in a liminal state, that is knowing that there is something they do not understand but not being able to return to their previous state of not knowing. In the liminal state, learners can become 'stuck' and behaviours that are often exhibited include:

- Mimicry (using the language and terminology of the discipline without really understanding what it means)
- Oscillation (going backwards and forwards/around in circles in one sense of learning; and
- Being 'stuck' and feeling unable to proceed

Understanding the Threshold Concepts in learning to be a researcher and the issues for candidates can assist supervisors in supporting candidates in their learning and development as researchers.

Conceptual Threshold Crossings in learning to be a researcher (Wisker)

The theory of 'conceptual threshold crossing' (Wisker, Robinson and Kiley, 2008; Wisker, Kiley and Aiston, 2006; Kiley and Wisker, 2010) builds on threshold concept theory (Meyer and Land 2006) which focuses on discipline learning at undergraduate level. Conceptual threshold crossing theory emerged when perceiving, then researching the learning behaviours of doctoral candidates who made visible leaning leaps in making sense of and articulating their learning and contribution to knowledge, at different stages in the doctoral learning journey. Research (HEA funded 'doctoral learning journeys' project 2007-2010, and parallel international project 2008-2012) suggests that there are particular stages in a doctoral candidate's work when they make a shift or learning leap and work at a more complex, higher, conceptual, critical and creative level in their learning, accompanied by meta learning (Flavell, 1979). Research, development and practice explored here derives from the research projects and a range of

TABLE 1: STUDENTS CONCEPTIONS OF RESEARCH

| | |
|--|--|
| Meyer et al (2005, 2007) Research is: | |
| Insightful exploration and discovery | Analytic and systematic enquiry |
| Re-examining existing knowledge | Incompleteness |
| Problem based activity | Misconceptions |
| Meyer and Halliday (2007) Research is: | The above eight concepts plus Scientific process |

TABLE 2: FACTORS AND STAGES IN THE JOURNEY WHICH TRIGGER THIS LEARNING

| Reflection | Motivation |
|--|---|
| Openness to learning | Undertaking fieldwork |
| Engaging in a dialogue in the field in a literature review | Devising appropriate methodology and methods |
| Development of confidence | 'Nudging' by supervisors |
| Visualisation techniques, mind or concept mapping | Reading – broad and 'philosophical' as well as topic focussed |
| Development of a sound research question or hypothesis | Mimicry i.e. developing gradual confidence in and ownership of discipline and doctoral level language |
| Goal setting | Meta-learning |
| Processes of writing | Absorbing academic culture and language; |
| Life and study skills, e.g. work/life balance, time management | Familiarisation with appropriate academic language within the discipline |
| Keeping a journal | Articulation of work (spoken or written) |
| Delivering on the work at conferences or symposia | Taking ownership of work; making research decisions |

practice. It considers ways of enabling, nudging and recognising doctoral students' 'conceptual threshold crossings', which contribute to knowledge, and support the achievement of the doctorate. These research projects used largely qualitative methodology and methods to explore the learning, supervising and examining experiences of UK-based and international doctoral students, supervisors and examiners, with participants from Canada, Sierra Leone, South Africa, Australia, New Zealand, South East Asia, Israel and the UK. Experiences of threshold crossing described using auditory, kinaesthetic and visual imagery: 'ding goes the bell'; 'it clicked into place'; 'a light went on'; 'the fog cleared'; 'a jigsaw piece coming together'; 'a good feeling, like an adrenaline rush'; 'a peeling away of layers of arrogance'; 'getting through a mountain'; 'ideas coming together' and 'a narrative weaving a pattern'.

Candidates' conceptions of research in the Integrated PhD program at Edith Cowan University (Ayers)

The Integrated PhD program is a new entry pathway for potential PhD candidate at Edith Cowan University (ECU). Students can qualify for the four-year program with a Masters by Coursework, with the first year comprising of coursework units to build research skills. Newly enrolled PhD candidates from the Integrated PhD and traditional pathway completed the Students' Conceptions of Research Inventory (SCoRI) to determine if there were any initial differences in their CoR when

starting the PhD. A focus group was also held with a range of HDR students to discuss their views on research. The initial analysis indicates there is no significant difference in the CoR between traditional and Integrated PhD entry paths. Future work will involve these participants repeating the SCoRI after Confirmation of Candidature and also interviewing supervisors to gauge their perspective on student's CoR from the different pathways. This study represents a unique application of the CoR that will hopefully help identify if, and in what ways, providing candidates with rich and supportive coursework experiences related to learning to be a researcher might be reflected in their conception of research.

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W06 Research literacies as resource in the 'gig' economy

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Keywords

research literacies; writing pedagogies; postgraduate writing

The rise of the digitally enabled 'gig' or 'peer' economy means that, increasingly, workers are employed on short-term (sometimes extremely brief) projects and tasks as freelancers or 'micropreneurs' (Logue & Höllerer, 2015). Within academia, this translates into casualization of the research and teaching workforce, zero-hour contracts and an emerging 'precariat' class (Standing, 2011). For those of us engaged in doctoral education, this raises the question of what role our graduates can play – or are likely to play – in such an economy. What kinds of skills and knowledges are likely to be useful in this environment, and what will be valued by the graduates themselves? This paper asks how our current PhD candidates need to think about what they as researchers have to offer the job market that can only be done by humans. That is to say, what skills and capacities will

be required by what the World Economic Forum (WEF) is now calling the 'Fourth Industrial Revolution' (WEF 2016).

The WEF (2016, p. 3) predicts that: 'Overall, social skills—such as persuasion, emotional intelligence and teaching others—will be in higher demand across industries than narrow technical skills, such as programming or equipment operation and control. In essence, technical skills will need to be supplemented with strong social and collaboration skills.' Organisations are expected to employ more and more freelancers with specific skill sets to work on defined projects, or even defined aspects of projects. Fewer and fewer full-time permanent jobs with predictable career trajectories will exist. Within this economic context, universities must reconsider the ways in which they educate their graduates, preparing them for a very different workplace from what previous generations have experienced.

In the case of doctoral graduates, we see evidence of justifiable anxieties about future career paths. Tragic-comic memes express the isolated panic of individuals, yet contradictorily chart the feelings these people share with many others – indeed, the grim humour of memes relies precisely upon the viewers' recognition that their individual experience is common. Memes drawing on images of Brad Pitt in *Fight Club* warn: 'First rule of the PhD job market – You do not ask about the PhD job market' (<http://www.nextscientist.com/wp-content/uploads/2015/10/job-tech-after-phd-job-market.jpg>); another from *Taken* depicts Liam Neeson saying: 'I saw your job posting online, I know what you want. I can tell you I don't have experience. But what I do have are a very particular set of skills; skills I have acquired over a very long education' (<https://memegenerator.net/instance/66988677>). The poignancy of memes such as these reveals the concerns of current doctoral candidates as they consider life beyond the PhD.

We argue that research literacies might be regarded as an embodied resource that doctoral graduates develop across the course of their studies. By referring to 'literacies' we draw attention to how this is much more than just the mechanics of reading and writing: it implies an appreciation of the social implications and discourses surrounding those skills.

As Hyland (2003, p. 24) reminds us: 'literacies are situated and multiple—positioned in relation to the social institutions and power relations that sustain them'. As such, these literacies intersect with the 'persuasion, emotional intelligence and teaching others' that the WEF predicts as becoming increasingly important in the future job market.

Drawing on a series of studies of research literacies and writing pedagogies for post/graduate writers (Badenhorst & Guerin, 2016), we explore the strategies and concerns of those currently charged with responsibility for developing this resource. In the process of articulating the details of those literacies, we begin to identify how a focus on research literacies as an economic resource might change the pedagogies of research supervision and the doctoral graduates produced by that shift in thinking.

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W10 Institutional research and doctoral education: A perspective from South(ern) Africa

Eli Bitzer

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Abstract

Institutional research is often referred to as exploring, understanding and explaining institutions for institutions. This paper draws on two decades of experience with doctoral education, approaches to institutional research and its relation to doctoral education. It essentially addresses two questions: What role has institutional research played in policy formulation, doctoral education practices, decision making and the quantity and quality of doctorates? What may a future Southern African doctoral education research agenda look like in terms of acknowledging and valuing institutional research? Inasmuch as doctoral education is promoted at the individual, departmental, programme or school/faculty level, it is also well embedded in institutional, national, international, systemic and administrative requirements and regimes. No doctoral candidate or supervisor is exempt from these requirements and institutional planners constantly need to challenge the ruling assumptions and traditions. Here institutional research may indeed play an important part. For instance, the past number of years evidenced research that have dealt with doctoral education policies and practices, throughput figures, doctoral quality issues and the like. Such studies are valuable as they provide a sense of the broader and narrower doctoral education contexts. Based on reported historical data and future prospects, the paper suggests an institutional research agenda that may better support doctoral education. It points towards areas of concern in Southern Africa in particular where institutional research could play a significant part in promoting increased sophistication towards research into doctoral education.

Keywords

doctoral education; institutional research; Southern Africa; policy formation; doctoral quality

Introduction

Doctoral education is important in supporting and promoting universities’ research capacity and reputation (Austin & McDaniels 2006; Cloete, Mouton & Sheppard, 2015). This may, in turn, contribute to research products that directly or indirectly influence scientific, economic or entrepreneurial activities (Fox 2001; Green & Powell 2005; Fillery-Davis 2014). In developing countries such as those in Southern Africa, their developmental state and stature is often measured by the capacity to contribute to knowledge – largely pointing to the quality of doctoral education and provision (Cloete et al., 2015).

On the surface it may seem that institutional research (IR) has little to contribute to doctoral education in Southern Africa. Good examples exist, however, where IR has revealed meaningful information. To name two examples: A cross-institutional study into conclusions chapters of doctoral theses in one discipline at five universities was conducted recently (Trafford, Leshem & Bitzer 2013) and another study investigated the quality of examiner reports in one discipline at six South African universities (Slabbert-Redpath 2015).

Institutional research on the doctorate

Researchers and institutional representatives affiliated to the Southern African Association for Institutional Research (SAAIR) were invited to respond to the following question: If applicable, what institutional research projects related to doctoral education were conducted at your university during the past five years? It was explicitly stated that such projects should include institutional research projects or studies commissioned by the individual university. Representatives of 18 out of 23 South African universities and three out of nine other Southern African universities responded to the invitation. Of the 18 South African universities, nine representatives reported that significant IR projects related to doctoral education were conducted in the past five years. Of the non-South African group, two members indicated that they were unaware of any IR on doctoral education, while one provided extensive detail (see Table 1 and 2 on the following page).

Table 1 reveals a limited, but interesting, picture. Firstly, as expected, most of the institutional research projects were conducted at traditional universities. Doctoral education obviously plays an important part in institutions with a stronger research focus and one would expect encouragement of institutional inquiry into this topic. The data show that at traditional and research-intensive universities chances of initiating IR on doctoral education appears to be higher than at other institutions. The data in Table 2 are non-representative and limited to only one institution and country. What this shows is lack of IR or reporting of IR results on doctoral education in Southern African universities outside of South Africa.

One may thus conclude that as IR on doctoral education appears to be limited, but making some valuable contributions within the Southern African university context. It projects a limited scope in terms of themes and topics, however, when compared to national and international research agendas. This obviously provides for a more coherent and encompassing research role and agenda for IR on doctoral education.

TABLE 1: IR ON DOCTORAL EDUCATION REPORTED BY SOUTH AFRICAN SAAIR MEMBERS

| Institution | Year | Nature of topic | Dissemination |
|--|----------|--|---|
| University A (traditional university)* | 2014 | Doctoral throughput rates were specifically monitored in a longitudinal fashion and reasons for the apparent internal inefficiency of doctoral education were closely studied. | This represents an institution-wide study which includes both continuing and former students as well as those who had discontinued their studies. |
| University B (comprehensive university) | 2014 | (a) Intercultural supervision; (b) Plagiarism in doctoral studies. | (a) The project was conducted in one faculty, but shared with supervisors institutionally. (b) The study was also done in one faculty and disseminated to relevant institutional bodies. |
| University C (university of technology) | 2013 | How doctoral students deal with supervisors' feedback. | This study was conducted in one faculty, but institutionally disseminated. |
| University D (traditional university) | 2014 | Equity of access to doctoral studies. | The study was conducted by the Postgraduate School and disseminated institutionally. |
| University E (traditional university) | On-going | Longitudinal research into several years of specific data of student progression at the doctoral level. | The study was conducted by the Institutional Research Unit and disseminated institutionally. |
| University F (traditional university) | 2014 | (a) The Directorates of Institutional Research and Institutional Analysis have devised a research platform to monitor Master's and doctoral production since 2004. This has enabled various cohort analyses of the institution's doctoral constituency; (b) The Bureau of Market Research has undertaken a number of student satisfaction surveys which have focused on doctoral experiences. | These studies have been integrated into the organisational architecture of the university's strategic plan. |
| University G (traditional university) | 2014 | Small research projects into doctoral education within the field of higher education studies have been undertaken by individual researchers. Examples: Genres of the doctorate, the role of scholarly communities in doctoral education and the challenges related to doctoral writing. | Disseminated through papers at conferences and articles, some of which are currently under review. The researchers are not part of the Institutional Research Division. |
| University H (traditional university) | On-going | Several projects have been undertaken, including longitudinal tracking studies of master's and doctoral students, the development of new information systems for studies at the postgraduate level, how the PhD prepares new academics for their careers and a comparative study of the PhD by publication across faculties in the institution. | Some of these reports have been institutionally published as helpful data to academic managers. |
| University I (traditional university) | 2014 | Quality of postgraduate degrees and doctoral degrees in particular. | The results of the project were disseminated to the Higher Degrees Committee. |

(* In South Africa universities are classified as 'traditional' if not affected by earlier institutional mergers; as 'universities of technology' if previously known as 'technikons', and as 'comprehensive' if established as the result of earlier mergers)

TABLE 2: IR ON DOCTORAL EDUCATION REPORTED BY SOUTHERN AFRICAN SAAIR MEMBERS**

| Institution | Year | Nature of topic | Dissemination |
|--------------------------|------|---|---|
| University X (Mauritius) | 2014 | Mauritius seems to be one Southern African country that keeps good higher education statistics at its Tertiary Education Commission (TEC). The information on doctoral education is reflected in the 2014 TEC report. | Some African research on doctoral education is reflected in a 2010 project report of the International Association of Universities (IAU), 'Innovative Approaches to Doctoral Education in Africa' (IDEA) (http://www.iau-aiu.net/content/idea-phd-portal-and-activites). This report covers sub-Saharan African countries generally and not only SADC countries. |

(** Three representatives responded, but only one reported IR-related work)

Conclusion

Without mentioning the IR areas that researchers are currently covering well, the following items for future research agendas may include:

- Longitudinal studies on doctoral education: This include studies that are able to pinpoint trends in external environments that include market needs for research graduates, the types of research education needed, doctoral employment patterns, doctoral migration patterns and the economic activities of doctoral graduates;
- Projects focussing on quality measures in doctoral education: Such projects may include quality assurance data at the different stages of doctoral education as well as data on whether such quality measures are effective and efficient. The current excessive bureaucratisation of ethical clearance procedures may be one point of particular concern; but such research would imply that the nature and aims of doctoral education are well understood by institutional researchers.
- In South(ern) Africa the affordability of university studies has been under severe scrutiny lately. This includes doctoral studies and how doctoral education is facilitated and conducted. IR may be increasingly needed to indicate how doctoral studies could be made more affordable and how to use the different variants of doctoral education more efficiently to educate doctoral graduates efficiently at high levels of quality;
- A particular focus may also be on the factors that inhibit Southern African universities to attract high quality academics as supervisors and how to build supervisory capacity for guiding future doctoral candidates;
- Finally, an increased focus on studies that involve both qualitative and mixed-methods data is needed. This implies a possible swing towards projects of a more scholarly nature and directed towards more meaningful, user-friendly and contextually sensitive data and findings.

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W13 Authorial voice as a writing strategy to enhance agency in doctoral education

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Abstract

Although scholarly writing since the 2000s shows revived interest in voice, a lack of empirical research on voice in doctoral writing exists both internationally and in South African higher education. The focus is to understand and explain the use of voice as a writing strategy to enhance agency in doctoral writing. This study aims to explore the textual resources available for writers to express their unique academic voices and to empower students to develop these. The qualitative case study reported supervisors and doctoral students' perceptions and understanding of voice. Although conferring different content to the notion of voice, the presence of voice in doctoral writing was valued as a non-negotiable as well as the pedagogical need of sensitizing doctoral students to voice along a pedagogical continuum as an essential aspect of advanced academic writing is recommended.

Keywords

voice; doctoral writing; higher education; academic discourse; pedagogy

Introduction

Although scholarly writing since the 2000s shows revived interest in voice, research primarily focuses on secondary school and undergraduate university settings. Both a lack of empirical research on voice in doctoral writing, as well as research on the viability of the instruction of voice, exist. The phenomenon of voice in doctoral writing in South African higher education is investigated to explore authorial voice as a writing strategy to enhance agency in doctoral education in the context of academic writing, and to determine the need for a pedagogical approach of sensitising doctoral students to voice as an essential feature of advanced academic writing.

Voice is still steeped in traditional origin of the 1960s of having a voice in composition writing and the 1970s emergence of Western individualism in the USA of promoting self-discovery and expressivist writing. However, the strong emphasis on individualism came under scrutiny during the 21st century with a shift of emphasis on the social context of writing.

Pedagogical practices: a theory/practice disconnect

The operationalisation of theoretical features is a prerequisite for instruction of voice (Canagarajah, 2015) through providing pedagogical useful tools and strategies. The heuristic proposed for voice is a merge between the Engagement framework of the Appraisal Framework (Martin & White, 2005) and the interactional model of stance and engagement (Hyland, 2008). This model, which serves as a heuristic for voice, is constituted of two main dimensions: individualised voice (stance) through which writers portray themselves and their opinions in their texts (hedges, boosters, attitude markers, personal pronouns); socialised voice takes two forms: linguistic devices for intra-textual voice which organise propositional content and guide the reader through the text (e.g. discourse connectors, sequence markers); linguistic devices for inter-textual voice which engage with the multiplicity of voices in the text (various forms of referencing) and with the reader.

Participants' perceptions of a voice pedagogy

Data from a qualitative case study purposefully selected from eight supervisors and eight doctoral students in the Humanities and Social Sciences at a South African University in perceiving their understanding and perceptions of voice in doctoral writing, showed notable differences: seven students were positive/qualified positive and four supervisors were positive about the presence of voice in doctoral student writing. Three supervisors gave qualified answers, e.g. 'Yes, but not enough, I think it's an evolution process' (SP). Possible reasons for this confidence can be ascribed to their conceptualising of voice as expressivist, 'inherent', a 'talent' or an 'EQ'. On the other hand, voice as a prerequisite for doctoral writing found in the literature was, but for one, unanimously confirmed, e.g. 'you can't get a PhD if you don't have voice' (SL).

The 21st century needs a reconsideration of voice to address the complex and layered disposition of voice in academic discourse. A continuum of approaches towards a voice pedagogy vary along degrees of critique, scepticism, caution, positive approach, recommendation and eventually propagating voice instruction. One supervisor echoed caution by valuing the importance of voice in doctoral writing on five out of

ten, whereas 14/16 respondents' ranking was above seven. Data confirmed the cautious optimistic approach in literature through terminology like 'raising awareness', 'sensitising' and 'awakening'. A fully positive approach of 'helping', 'assisting' and 'facilitating' (Canagarajah, 2015) was corroborated by synonyms in the data like 'guide', 'grow' and 'nurture'. Terminologies of promoting agency and empowerment in recommending a voice pedagogy (Matsuda, 2015) were not explicitly found in the data, but expressions such as '[v]oice does grow with the academic push' (DS) or by 'actually drag[ging] it out' (SPSG). An approach that voice can be taught and learned (Guerin & Picard, 2012) like other text qualities (Matsuda, 2015) was confirmed by four each supervisors and students, e.g. 'Yes, taught... Yes I think it [voice] should be taught' (DL).

Conclusion

As yet no single approach to a voice pedagogy exists, but varied approaches along a continuum. Theoretical research and agreement on the importance of voice in academic discourse have not been matched by empirical research. A 21st century approach to voice needs to be constantly revised and operationalised. Therefore, the theoretical conceptualisation of my research culminated in a heuristic as a bridge towards an eventual instructional model. A pedagogy for voice, however, will be a pedagogy of negotiated voice, not prescribed by predetermined formulas. Doctoral students need voice instruction to enhance their agency in advanced academic discourse in applying features of voice as tools and strategies.

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W45 The Contrasting Educational and Career Experiences of Two PhD Candidates from Rural Communities

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Keywords

doctoral education, rurality, low-SES, student experience, postdoctoral careers

As the full spectrum of university courses is not yet available to individuals who reside outside of metropolitan areas, many relocate into Australian cities to continue their studies in the hope of improving their career prospects. The onerous task of relocation, combined with low-socioeconomic status may confine the educational endeavours of rural residents, effectively precluding them from entering postgraduate studies. At this time, little is known about rural residents' engagement in postgraduate studies (Harvey & Andrewartha, 2013), and even less from the perspective of these students. This paper seeks to provide a starting point by offering the perspectives of two PhD candidates from Rural Communities with regard to their career aspirations and trajectories to date. It does so by sharing the authors' accounts of their experiences with compulsory and university education. With differing communities of origin, the authors show the similarity and contrast in their experiences of education, both within and outside of their rural and academic communities. Their experiences show the ways in which their differing positions in their communities of origin and current locations have shaped their education and career ambitions.

This investigation adds to knowledge by showing the challenges in facilitating education for learners who have relocated from rural communities into metropolitan campuses and the persistent role of family background in educational experience. The differing experiences of each author offers a way to understand the higher education experience, so that the education of students from diverse backgrounds may be supported and higher education endeavours promoted within rural communities. To understand the educational experiences and potential career trajectories of learners from rural communities, an approach that documents their experiences and analyses their accounts is required.

To fulfil this goal, an auto ethnographic approach was used, and included a discussion of each author's text in relation to the research literature. In particular, a collaborative auto ethnographic method was utilised, to allow the authors to analyse their own experiences in the first instance. In an attempt to add another dimension to Chang, Ngunjiri and Hernandez's (2012) collaborative auto ethnographic approach, the authors followed the traditional self-analysis of auto ethnographic text, followed by a novel analysis of each-other's text without be prompted by the self-analysis undertaken by the author. This method is a two-step process that first allows the author of each text to deeply consider their experiences through their own writing. Second, the author's knowledge is extended by the valuable reflections offered by another. This technique, which extends the collaborative auto ethnographic method of analysis, may have many benefits for those who seek to understand both similar and dissimilar others as part of their research. In this instance, the method illuminates the ways in which the experience of higher education may unfold for learners from rural communities and shows the consequences of congruent and divergent experiences. It is argued that by analysing our own thoughts as well as thoughts of another person from a similar geographic, family and socio-economic background, that it is possible to identify key similarities and differences

in the higher education experience of students from rural communities, and the possible reasons for this resemblance or divergence. In particular, by analysing auto ethnographic texts, it is possible to understand experiences in terms of the self, the institution and the field and illuminate; the role of family background; the significance of geographic location of community of origin in relation to the metropolitan area and; the policies that have enabled or constrained the educational and career endeavours of the authors (McDonough & Fann 2007). Further, it offers ideas about the role of institutions in facilitating student and community engagement as well as possible contributors to completion or attrition at all levels of university study.

Such an understanding provides a beginning in renewing the delivery of education in metropolitan or rural areas in a way that supports the educational attainment of learners from diverse backgrounds. Using techniques that both minimise attrition and assist completion is beneficial to learners and institutions alike. The findings of this inquiry about educational experience, discussed in terms of the self, the institution and the field, suggest that regardless of the location in which students from rural areas forge their academic identity, they require specialised support to achieve their educational and career goals.

It is suggested that further research that investigates the autobiographical text of other learners, with a view to pursuing similar lines of inquiry may assist the realisation of the policies and practices that assist learners' educational attainment, regardless of their background. The importance of supporting learning, either within or outside, communities of origin is outlined through the social contribution that may be attributed to the author's educational attainment. The benefits of full social realisation of their educational endeavours is highlighted in the authors' concluding comments about their anticipated postdoctoral career trajectories.

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W48 Some glimpses of international academics' supervision experiences

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Keywords

academic mobility; international academics; supervision

Academic mobility for staff and students is a key priority for global higher education. Ex-USSR academics have taken

advantage of these opportunities for mobility by migrating to Australia; however, very little is known about their experiences of working in Australian higher education. Awareness and understanding of diversity and differences in Australian teaching and supervision practices can contribute to the building of the university capacity and integration of the international academics into the university community.

The 'pedagogy of supervision' (Green & Lee, 1995) has been extensively studied in Australia over the past 20 years as the higher education sector responds to the increasingly diverse nature of both supervisors and doctoral candidates. For many academics, 'supervision is neither simply 'teaching' nor 'research', but an uneasy bridge between both' (Lee & McKenzie, 2011, p. 69). International academics bring their own overseas experiences of research supervision which might differ from traditional Australian practices. In Australia international academics often supervise students who do not share their cultural background and/or their first language.

To understand more about ex-USSR academics' perceptions of and challenges in teaching and researching in Australian universities, a narrative enquiry was conducted. Semi-structured interviews were conducted with 24 ex-USSR academics from South Australian higher education institutions. Participants were invited to recount stories and share perceptions of their migration to Australia and working at an Australian university, including supervision of research students. Study participants have shared memories of being supervised and being supervisors both in ex-USSR countries and in Australia. I was focused on exploring how their ex-USSR cultural background and prior academic experience impacts on supervisory practices in Australian universities.

Background

The education system of the USSR was 'centralized and controlled by the Communist party, which was governing all aspects of scholarship, teaching, and creativity' (Gaworek, p.55), especially in the arts, humanities and social? sciences. The higher education system of the USSR was highly influenced by military mentality and language (Sirk, 2007). As a result, the higher education system mostly followed a 'one-man management' principle, in which every supervisor and every student had to be closely managed from top down (Kuraev, 2016). Under this controlling regime critical thinking was not in favor, as everyone was supposed to think in the ways approved by the Communist party. Most of the participants in the current study had been educated and undertaken their PhD research in this hierarchical and totalitarian environment of the USSR. The ideological control of this environment, however, appears not to have weakened their ability to analyze and draw independent conclusions.

Findings

It was interesting to see that, when ex-USSR academics supervise research students, they unwittingly demonstrate some of the generic characteristics of the USSR higher education system. Analysis of the project data show two contradictory parallel discourses. On one hand, some participants utilise a totalitarian research process control method when supervising in Australia, in which they carefully monitor and assess their research students, quite often at the expense of their own research progress and professional development. On the other

hand, other ex-USSR supervisors might pass control over the research project totally to their HDR student, assuming postgraduates should be ready to research independently with a minimal lead and attention of their supervisor.

Overall, four challenging areas for ex-USSR supervisors in Australia have been identified: communication styles, cross-cultural differences, English levels and the level of student readiness to undertake a degree by research. Some of the study participants were trying to introduce command style and direct control methods in their supervisory practices. Some Australian students were not happy about this practice and experienced this supervision behaviour as aggressive. Another challenge was understanding the importance of different religious traditions and supervisors' acknowledgement of the equity and equal rights of every person in Australia. English is traditionally recognized to be a challenge for international staff and students and study participants' data confirms this. Supervisors working in sciences underlined that future research and innovation opportunities are located in interdisciplinary research; they reported a low level of student readiness for such research, particularly in relation to the narrow education of Australian students. This is seen by some supervisors as a barrier to a successful research career.

Conclusion

It is argued that cultural background and previous supervisor's experience do influence international academics' supervision practices. Ex-USSR supervisors might unconsciously use some of the practices they were introduced to in the USSR and these may not be relevant or helpful in supervising at an Australian university. Thus, some of the international academics' supervision practices might need to be unveiled and adjusted to benefit student-supervisor relationships and overall research project outcomes, so that time, mental and emotional effort, and university resources are used effectively. Additional supervisor training might provide an appropriate support.

Awareness and understanding of diversity and differences in Australian supervision practices can contribute to the building of university capacity and integration of international academics into the university community. It is argued that diversity and pluralism in supervision practices have to be acknowledged and supported as appropriate. It is also claimed that, due to the internationalisation and globalisation of higher education, the supervision challenges identified in the case of ex-USSR academics might be relevant in the supervision practices of international supervisors from other countries.

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T05 Conceptualising an integrative doctoral curriculum

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Keywords

doctoral curriculum, industry-collaborative PhD, entrepreneurship

Various new forms of the doctorate have emerged in recent decades with the aim of better preparing researchers for employment in both academic and industrial settings (Park, 2005; Boud and Tennant, 2006). Many such programs have responded to perceptions that candidates need to acquire a wider range of ‘transferrable’ skills (Kiley, 2014) and, increasingly, competencies related to entrepreneurship and the commercialisation of research (Wellings, 2014; McGagh et al., 2016). Efforts to augment traditional doctoral models have meant that ‘hybridized’ curricula have increasingly been adopted (Thorlakson, 2005).

This presentation reports on work undertaken to conceptualise such a mixed curricular system—that of the ARC Centre in Biodevices, which is an ARC Industrial Transformation Training Centre, funded in 2014. The Centre provides doctoral training in engineering biodevices, diagnostics and other areas of medical technology at Swinburne University of Technology. Its program is unusual in a number of ways, especially in its combination of a ‘biodesign’ focus (Yock et al., 2015), an industry-collaborative component (Borrell-Damien et al., 2010) and an emphasis on pedagogies designed to encourage entrepreneurship and research leadership (Williams Middleton and Donnellon, 2014). The first year of this doctorate comprises an extended and interdisciplinary topic development process, whereby candidates establish commercial industry drivers for their proposed research in clinical or industrial settings, followed by screening, ideation, design and ‘path to market’ planning stages. These are scaffolded by integrated coursework. Candidates then ‘pitch’ a fully developed proposal and business plan to a pool of prospective business partners before finalising arrangements for the industry-collaborative project they will pursue over their remaining candidacy.

Given the innovative nature of the program, its leaders wanted to explore a range of options in relation to program evaluation criteria and quality assurance. The purpose of the current study was to capture complexities underlying the program’s formalised design and to explore them in ways that would contribute to this evaluation process. With this in mind, we decided to use Activity Theory to delineate the Centre’s doctoral curriculum and, in particular, to focus strategically on competing tensions in its underlying activity system (Engeström, 2009; Yamagata-Lynch, 2010). We conducted interviews and a group meeting with the program’s leadership and design team and analysed participants’ discourse, both thematically and in terms of Engeström and Sannino’s (2011) typology of ‘contradiction’ elements. Our analysis led us to the two following key areas of

debate that govern various tensions between the curriculum and other nodes in the activity system:

- How can candidates achieve self-directed, personalised research outcomes in a more structured program? (Conversely, how can structured learning opportunities be designed and presented in ways that enhance self-efficacy in research?)
- How can quality be rigorously maintained in a dynamic interdisciplinary setting? The curriculum involves a novel accelerated approach—especially in its first year, which includes structured intensive phases. In some ways this approach breaks with past conventions around what can be achieved in three years.

Our presentation explores the team’s discussion of these issues in terms of a range of cross-cutting themes, including clashes with traditional approaches to topic creation in bioengineering projects, various other problems in pedagogy and evaluation related to the Centre’s interdisciplinary focus, and concerns around time, given the accelerated nature of the program. Many decisions in the curriculum design process had been implicitly or explicitly informed by the team’s responses to these overarching questions, which continue to be salient in the context of the ongoing program. Solutions the team came up with in light of these issues included value-adding through creative and multidisciplinary teaming, flexible coursework solutions, extensive support (including provision of a PhD coach and two layers of industry mentors) and a range of strategies to help candidates maintain focus in the face of complexity. The areas of tension around hybrid doctorates and interdisciplinary research that we identified in our study are not trivial—although in some senses they are not altogether new to doctoral training. They are however ‘writ large’ in this model, as one of its academic leaders said, and they are likely to remain considerations for its ongoing program evaluation and risk management. We would expect this to be the case for other emerging doctorates with a focus on industry collaboration and entrepreneurship, and we feel that more research is needed in relation to quality assurance in this arena.

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T12 New edicts, networks and nexuses of practices: a fresh look at international doctoral pedagogy

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Keyword

international PhDs, practice-based learning

Introduction

The paper presents research into local, national and global influences impacting on the learning and pedagogy of international higher degree (IHDR) research students in their first year of postgraduate study. Focusing on social and material aspects of candidates' early orientation to the academy, the research identifies this period as important for establishing effective learning and for enhancing quality postgraduate pedagogy.

Methodology

The research draws on practice-based analyses (Gherardi 2008; Kemmis et al. 2014) of focused and linguistic ethnographic data (Kornblau 2005; Rampton, Maybin & Roberts 2014) from two studies: an extensive ethnographic study supplemented by data from a precursor evaluation survey. The data from these studies, conducted between 2014 and 2016, comprises over 103 hours of observation and audio-recordings. Fifty-three participants were directly involved in the studies and an additional 30 took part as incidental participants. Candidates in the ethnographic study were observed in supervisory meetings, seminars, laboratories, at their desks and at the Confirmation of Candidature presentation. In all these settings, the focus of the observations and audio-recordings was on candidates' and supervisors' actions and activities – as practices (Green 2009). In addition, candidates and supervisors from both studies were interviewed to ascertain their experiences and conceptualisations of IHDR first-year research learning.

Findings

In a shift away from seeing doctoral 'learning' principally through the completion of staged activities, the practice-based analysis identified that research learning involved a complex and fragile entanglement of individual/institutional actors, agency and epistemic cultures in which candidates' knowledge unfolded in situ. In this 'ecology of practices' (Kemmis et al. 2014), learning was shown to be sensitive to global shifts in research pedagogy as well as to local university and faculty arrangements. Social and material arrangements of disciplinary learning environments in particular were shown to influence the pace and kind of first-year learning.

A key finding of both studies was that first-year IHDR learning is significantly influenced by candidates' own agency and by supportive (or otherwise) supervisory practices. This latter finding confirms existing research on the importance of professional and culturally attuned supervision for research candidates (James & Baldwin 1999; Jones 2013; Manathunga 2014; Noddings 2003). Social and material features of disciplines as epistemic sites were also shown to matter in first-year learning. These findings reflect emerging research on the influence of epistemic cultures on learning (Fenwick, Edwards & Sawchuk 2011; Nerland 2012; Perrotta 2015).

Conclusion

The paper concludes that participating (broadly and proactively) in research practices is the basis of first-year IHDR learning. While this proposal may appear self-evident, it is supported by the empirical data and equally by practice-based theoretical underpinnings. As '[l]earning is directly implicated in practice, [it] can be represented as an outcome of participating in practice' (Boud & Hager 2012, p. 23). The empirical data supports the contention that, embedded within the broader contexts of their candidatures, participating is facilitated in three principal ways. These are through: agency by candidates; proactive relational and professional 'care' (Gherardi & Rodeschini 2015; James & Baldwin 1999; Jones 2013; Noddings 2003) by supervisors and others; and the social and material features of disciplinary knowledges themselves.

The paper challenges the academy to understand more deeply how social and material arrangements make a difference to first-year IHDR learning and how agency (of candidates) and care (by supervisors) can be fostered. The paper adds an additional challenge to those responsible for research learning: understand those epistemic learning environments whose social and material features inherently facilitate participating (principally science and engineering) and emulate these in disciplines whose epistemic settings are structured in ways that minimise participating (in some cases, arts and humanities). Given growing international, national and local pressures on doctoral learning and research impact, it is increasingly important to understand research learning as a network of social practices and material arrangements which can be geared more or less effectively for learning.

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Different educational spaces of the same higher education institution (HEI) have different student subcultures and expectations of the institution. These differences in sociological classifications and educational ideals should be recognised during strategic positioning of the HEI. Does the HEI clearly communicate what livelihood-preparation the (prospective) student can expect — and what not? A lack of transparency and communication about the strategic positioning of a HEI might create expectations among the students that might not be met and leave students disillusioned and inadequately prepared for the future of their choice. Contrary to official strategic statements, different models of HEIs might exist on each of the different campuses of the same institution. A HEI habitually applies the same leadership and management decisions and choices to all of its campuses. The lack of acknowledging these differences might be unethical, as it should be reflected in decisions on strategic positioning.

A university in central South Africa provided an example of the abovementioned dilemma. The University of the Free State is located in three different spaces. The main campus was previously known as the University of the Orange Free State (UOFS) and was established in 1904. The satellite campuses — the South Campus, the former Vista University, and the QwaQwa campus, the former UniQwa or University of QwaQwa, were established in 1982. Due to government reform of its higher education system in 1994 the two latter institutions lost their institutional status when they were incorporated as satellite campuses into the University of the Free State (UFS). The UOFS served white students from central South Africa in Afrikaans, and later also in English. UniQwa served rural students in English and Vista urban black students, also in English. Currently, the institution has positioned itself as a research university. Because of the students' diverse backgrounds, they might have different expectations of their HEI. However, HEIs are often strategically positioned with only the main campus and its culture in mind. In its latest strategic planning document and on marketing and social media material, the UFS strategically positions itself as a research university.

In the mid-1900s, Erik Erikson, a developmental psychologist and psychoanalyst, known for his theory on the psychosocial development of human beings and for coining the phrase identity crisis, introduced the concept of spatial identity. This includes spatial aspects, such as place status, as the defining factors of identity and the role of spatial identity in the perception, understanding and planning of spatial environments. Towards the end of the 1900s, spatial planning theorists emphasized the need to adapt leadership decisions in different geographical areas — including on higher education campuses — and that group identity and subculture contributes greatly to the unique leadership and management style of the particular institution.

Semi-structured qualitative interviews were conducted with 102 randomly selected students on the three campuses of the UFS. The study identified the trend that the students consider their campus as an idealistic and utopic space. Each campus-community has its own subculture and expectations of where the UFS will position them and each expectation points towards a different model of university, although the institution is positioned as a single-model university (Figure 1).

T25 My dear HEI, are you positioned to purposefully position me?

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Keywords

strategic positioning; university models; strategic communication; campus culture

Overwhelmingly the students consider their campus as an idealistic space. Each of the three utopias has its own unique campus-community with subcultures and expectations of where the UFS positions them. And, each expectation points towards a different model of university. Students on the main campus expect the research university model where scholars are expected to pursue research for the sake of research and where undergraduate studies are perceived merely as preparation for postgraduate study.

3 UNIVERSITY MODELS

| Research university | College university | Technical university |
|---|--|---|
| Gifted universities | Profession minded individuals | Practical minded individuals |
| Research for research sake | Theoretical and practical inquiry | Practical application of useful knowledge |
| UG studies merely preparation for PG | Seldom pursue PhD | Seldom pursue M and PhD |
| PRODUCE academic researchers | PRODUCE civic and social professionals | PRODUCE professional technicians |
| ONE UNIVERSITY VISION "excellence in academic achievement" | | |

Figure 1: Although the students experience three different university models, the leadership position the UFS as a research university.

The students' expectations and how they differ from the reality of the resources they will accumulate to build their future reminded me of the well-known children's story, The Three Little Pigs. The printed version dates back to the 1840s, but the story itself is thought to be much older.

Three piglets were sent out into the world by their parents to 'live their dreams'. They desired to attend HEIs with respectively a focus on research, professional education, and technical education (Figure 2 and 3). Somehow they ended up at the same institution that more-or-less promised to help realize their dreams. The first piglet survived the fortune-eating wolf, but the

other two piglets did not. What a pity... just around the next hill stood two institutions that could secure their dreams.

With reference to the fable, students expect a variety of sociological classifications and educational ideals from their HEI. These differences should be recognised during strategic positioning of the institution. A lack of clear positioning might create expectations among the students that might not be met and leave students disillusioned and inadequately prepared for the career of their choice. Contrary to official strategic statements, different models of HEIs might exist on each of the different campuses of the same institution. Is it not the institution's obligation to recognise, communicate and address it when strategically positioning the institution even before the student asks, 'My dear HEI, are you positioned to purposefully position me?'

T30 Statistics say the darndest things

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Keywords

South African National Development Plan 2030; doctoral graduation; supervisory capacity

Globally, the pressure to expand the PhD enrolments and graduates at universities necessitates informed and rigorous evaluation of the South African government's expectations and interventions in relation to the current status quo. Although the government has funded a variety of widely-published research projects, they did not appear to influence the original expectations and interventions, since the situation continued unchanged. This extended abstract illustrates the South African scenario in this regard, and present statistics that contradict the policy expectations. Data from recent government-funded research projects are used to allow the statistics to say the darndest things.

I want my university to equip me to ...



be a professional academic researcher to make a global impact and a scholar in my field of specialisation.

Figure 2: First Piglet required a research university model to position him in an academic career.

I want my university to equip me to ...



apply my knowledge theoretically and practically (and technically) in my profession of

choice. I might obtain a PG Dip, but I prefer to sharpen my practical skills.

Figure 3: Second Piglet required a college university model, while Third Piglet required a technical university model to position them in the career of their choice.

The South African National Development Plan (NDP) 2030 envisions growth and development, which reminds of the overnight growth of the magic beanstalk that creates access to a castle in the sky (Figure 1). A critical and magical contribution to social and economic progress and increased doctorate graduation are expected from the higher education sector. Pressure to expand the number of doctorates produced necessitates rigorous evaluation of the government's expectations. This paper states that government's expectations are unrealistic, and it thus presents alternatives.



Figure 1: The South African National Development Plan 2030 envisions growth and development from the high education sector that reminds of the overnight growth of the magic beanstalk, which creates critical and magical contributions to social and economic progress.

| Doctoral graduate growth determinants (2012-2030) | | | |
|---|--------------------------------------|----------------------------|--|
| GRADUATION | SUPERVISION CAPACITY | FUNDING | DOCTORAL SYSTEM |
| <p>39% (2012) CANDIDATE GRADUATE</p> | <p>75% (2013) DOCTORAL ACADEMICS</p> | <p>INSTITUTION STUDENT</p> | <p>D GRADUATES 1st YEAR ENROLMENTS</p> |

Figure 2: The South African National Development Plan 2030 announces government's basic premise that doctoral graduates are able to increase from 1500 to 6000 annually and that supervisory capacity is able to increase from 43% to 75% among the academic appointments at public higher education institutions, while government funding of students is to increase. The current throughput from first year enrolments to doctoral graduation is less than 1%.

ENROLMENT AND GRADUATION statistics indicate that 61% of doctoral enrolments burden support and resources without ever graduating. The 6000 target will only be reached in the next century, and not in 2030 as government envisages, while SUPERVISORY CAPACITY statistics indicate that the government's aim to increase 43% of doctoral staff to 75% by 2030 is hindered by non-academic job options, retirement and emigration, and its own policy that requires that 80% of staff should be black.

FUNDING statistics indicate that decreased funding and the consequences of the recent #feesmustfall protest action derailed institutional budgets. Top universities recently announced – in contrast to previous surpluses - huge financial losses and drastic budget cuts for 2017, of which up to 80% might be to HR budgets. Cuts in global, national and personal household budgets increasingly halt doctoral studies. In the DOCTORAL SYSTEM, fewer than 1% of undergraduate first-year students eventually become D-graduates. In addition, the rapid increase of international D-graduates at South African institutions results in improving numbers, but misrepresenting statistics. Cloete, Mouton and Sheppard (2015) project academic numbers, doctoral staff and doctoral graduates, according to the government's expectations and what the reality is (Figure 3).

This paper concludes that responsible stewardship of human, financial and other resources challenge government's highly politicized access and redress agenda (Cloete 2011). Individual supervision by senior academics is an ineffective luxury and capacity alternatives include group approaches. In addition, the involvement of retired professors and industrial experts will contribute to the doctorateness and employability of the doctorandi. Subsidies for professional doctorates will shift budgets and the re-evaluation of the motivation for spreading national and institutional money thinly, rather than investing deeply, is vital.

South Africa needs a doctorate system that begins even before students apply for undergraduate studies so as to address the challenges indicated by its own statistics.

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T34 The Research Writing Tool: supporting conversations about writing development between students and supervisors

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Keywords

research writing diagnostic; supervisor support, HDR writing development, feedback

This paper reports on the development of a 'light touch' diagnostic tool – the Research Writing Tool (RWT) – that endeavours to build student research writing capacity by supporting both supervisors and research students to jointly identify student writing needs. The RWT identifies and distinguishes areas of writing that cause most difficulty for the student research writer, using 'low-tech' terminology and easy to understand examples. The RWT draws on insights about research writing from both supervisors and students (broadly based in medical and related disciplines).

Importantly, the RWT and the methodology employed in its development respond in different ways to three important areas identified within the research literature. First is confirming the understanding that feedback, employed as dialogue rather than a 'telling', enables students to 'monitor, evaluate and regulate their learning' (Ajjawi & Boud, 2015, p.2). Second is addressing the issue of insufficient explicit attention paid to writing within higher degree research pedagogy and supervision (Aitchison & Lee, 2006). Third is challenging the perception that supervision practices need remediation by an outside 'expert' (see, for example, Halse, 2011) since supervisors and students are actively involved in both generating and testing the RWT. Findings from interviews with students and supervisors inform the content and design of the RWT, as well as the creation of a simpler, more accessible meta-language than that used within other course work diagnostics, such as the MASUS (Bonanno & Jones, 2007).

In comprehensive initial interviews with 10 supervisors and 10 higher degree research students we asked what worked for them in developing research writing and what they struggled with. The findings (and sample student drafts with supervisor comments collected from interviewees) suggested design features, provided content, guided how the Systemic Functional Linguistic (SFL)-influenced descriptions are used and, most significantly, highlighted the areas to focus on in the tool. One problem particularly specified by supervisors was that time constraints prevent the giving of sufficient quality developmental feedback. All supervisors noted time is limited for face-to-face meetings, which all supervisors and students agreed is most conducive for such feedback. Lack of time, especially in the lead up to deadlines was also identified by supervisors as the reason they most often correct or edit rather than give developmental written feedback. The targeted resources the RWT provides offer shortcuts to just such high quality feedback.

Though expressed in different ways, every student said there were three essential elements in feedback, and that one or more of these were missing in much of the feedback received. Most often reported as missing was advice on how to 'fix' the issues identified; also often reported as missing was sufficient explanation about what the writing issue actually was; and though less often, still noted as sometimes missing was the exact location of the problem. The RWT provides each of these elements in full for each of the areas focused on, in annotated sample texts and links to targeted learning resources.

Responding to the above findings, the overall framework of the RWT was organized around only four main criteria (critical aspects of writing), each identified by a one-word label – Structure, Flow, Style and Grammar. When one is selected from the main menu, an introductory page appears, briefly describing

and exemplifying that aspect of writing. A drop-down submenu also appears, listing aspects of that criterion, which when selected open an introductory page. Once a choice is made, three links appear which can take users to Model Examples, Student Examples or Learning Resources. Figure 1 below shows a mock-up of the Flow section introductory page, the full menu and the three resource links.

Structure and Flow deal with meaning beyond sentence level,

| The Research Writing Tool | | RESOURCES | |
|---|---|-----------------------|---------------------------|
| MENU | FLOW: GENERAL INTRODUCTION | | |
| A. STRUCTURE | <p>If there is no flow in a text, readers may comment:</p> <p><i>I can't see a connection here</i> <i>I can't follow this</i> <i>No logic</i></p> <ul style="list-style-type: none"> • Flow makes it easy for readers to follow your ideas and complex, technical information across sections of text. (BUT FIRST, structure your text well - see Criterion A) • Flow is created by different kinds of meaning links made between words and ideas across your text i.e. across sentences, paragraphs, sections, whole text (NOTE: grammar creates meaning links within a sentence) • To create flow, you can use the strategies listed in the FLOW menu to make these higher level meaning links. | MODEL Examples | |
| Whole text Section/stage Paragraph | | | STUDENT Examples |
| B. FLOW | | | LEARNING Resources |
| Information ordering Word families & reference chains Logical relations | | | |
| C. STYLE | | | |
| Formal; technical Impersonal; objective Abstract; complex | | | |
| D. GRAMMAR | | | |
| Sentence structure Noun groups Verb groups | | | |

Figure 1. RWT FLOW introductory page (Note: in final tool, only FLOW menu visible here)

whereas Style and Grammar deal with meaning below and at sentence level respectively. Structure deals with functional staging at all levels of text; Flow with linking strategies that create coherence and clarity; Style, with both word selection and word group structure and Grammar with sentence and word group construction. All four criteria focus on appropriate choices for the academic context, discipline and genre.

In more detail, the resources that users can move onto from any introductory page are:

Model Examples: quality research writing samples (published articles, successful theses) illustrating the selected aspect, with annotations on what is done well.

Student Examples: student writing samples illustrating problems with that aspect, with full supervisor feedback comments.

Learning Resources: PDF and interactive resources available online on that aspect, most from open-access reputable university sites; each annotated to alert students to any variation in labelling used of this aspect.

The first criterion being developed in the RWT is that of Flow. Usually labelled cohesion and coherence in learning resources such as the MASUS (2007), Flow is the least transparent to supervisors and students. But it is a most crucial aspect of longer-form thesis writing, as confirmed in sample drafts collected. Interviewees were asked for feedback on the first Flow sub-criterion developed, Information Ordering (also known as Theme or Information Structure). All respondents identified the three links offered as particularly helpful, with the link to student drafts with supervisor comments as the most helpful and innovative part of the tool.

To conclude, in the Flow section and other RWT sections currently under development, the tool provides identification and explanation of writing issues noted as problematic in interviews. It also models high quality examples of feedback on the specific issue in student drafts and provides annotated model texts by successful writers. The guidance by example in these two types of writing samples in the tool are supported by links to targeted learning resources that can be consulted or worked through by students who wish to improve in this area. Consequently, the RWT both responds to identified needs, and acts as a mechanism to support student and supervisor conversations about writing and students' self-monitoring and regulation of their writing.

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T37 Professional Doctorates: Retelling the Story

Ben Wadham

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In 2008 Lee Brennan and Green, writing on the contemporary story of the Australian professional doctorate acknowledge the positioning of the professional doctorate within the traditions of the academy. They describe it as, if I can infer, a strange positioning:

In a sense, the story of the Professional Doctorate always has to be re-told, since it is a strange story, a story of difference and otherness. It is an otherness from the conventional story of disciplinary and hence from the story of the PhD (2007:276).

Where then, is the professional doctorate in 2016? In this paper, I reflect upon the design, teaching and management of the Doctor of Education at Flinders University in South Australia. This story is worth retelling because of the recent changes to the Australian Qualifications framework (AQF), and the apparent rush on 'doctoral educational research' and doctoral regulation. At Flinders University, for example, an Office of Graduate Research has recently been established, falling in line with a general national trend to professional doctoral awards and their servicing. The example that professional doctorates are equivalent with PhD's, and increasingly included in the Research

Training Scheme (RTS), really does beg the question: how is the professional doctorate distinct, in its own right, and how does it remain tied to the traditional disciplinary divisions

The Professional Doctorate: A brief overview

A key theme that runs through the research literature on professional doctorates is that question of its relationship to the archetypal doctorate – the PhD. PhD lite, or poor definition between the sometimes dual carriage of PhD and Professional Doctorate fails to live up to the rhetoric of professional doctorates: knowledges, skills and leadership to manage the challenges of the 21st century. This paper considers the current experiences of hosting a doctor of education within these historical discourses.

Professional Doctorates, within Post Graduate studies have proliferated over the past 20 years. A defining feature of this period, and the development of professional doctorates is the parallel development of the 'knowledge economy'. The professional doctorate is a marker of the 'knowledge economy'. The professional doctorate is subsequently often represented as an award that meets the challenges of the 21st Century – more than the PhD. The PhD remains the dominant doctoral award, exercising greater status but remaining an artefact of the traditional university. The professional doctorate however is represented as meeting the challenges of the 21st century – recognizing real life skills in the professions, and working toward profession relevant knowledges and new incarnations of scholarship and entrepreneurialism. The professional doctorate seeks the flexible, adaptable professional seeking to develop critical forms of analysis and leadership. But in more functional terms the professional doctorate provides another marker of the 21st century and the pervasion of neo liberalism in the higher education sector: the performance of higher degree research is now explicitly linked to a global knowledge economy, reduced state funding, increased public demands for higher levels of education, and mass enrolments of diverse student cohorts'. (McWilliam, Singh, 2002).

The Doctor of Education is one of the more common professional doctorates. In general, it focuses on preparation for managerial and administrative leadership in education, the preparation of practitioners - from principals to curriculum specialists, to teacher-educators, to evaluators who can bring existing knowledge to solve educational problems. These upwardly aspiring professionals undertake the Doctor of Education because it is modular, cohort based and can be tailored to address professional challenges and development. In traditional terms the PhD in education is assumed to be a traditional academic degree that prepares researchers, university faculty, and scholars in education, often from the perspective of a particular discipline (i.e. sociology, psychology).

Rethinking doctorates

Sitting behind this retelling of the Doctor of Education story is an engagement with the historical development of the professional doctorate and the educational doctorate. This history must be revisited critically in the light of the current developments in doctoral education, in knowledge production and in developing different relations around knowledge between universities and different social and professional domains.

There is much ado about the 21st century. Rapid change, the detraditionalisation of modern society, growth in communications, a proliferating media and the changing relations of the self are all met with a 21st century educational model where the common supposition seems to be that increasing fragmentation means the dissolution of society. This assumption is the basis for arguing that we must educate doctoral candidates to be reflexive, adaptive and innovative graduates. But despite the rhetoric rapid change is often met with instrumentalising responses such as standardization, deregulation and increasing regulation. As Brennan et al (2007) explain, despite the need for opening up the current times can also bring out emerging issues for doctoral education at a time when anxieties may inhibit taking up opportunities for innovation and linking with new kinds of knowledge production that go beyond Euro-centric and university-centric traditions (Brennan, Lee & Green, 2007).

The Doctor of Education at Flinders University has recently undergone significant change. The award has moved from a coursework award to meet the AQF level 10 (doctoral) requirements. The award is now funded through the RTS, but there is also increasing pressure for candidates to successfully complete on time. So the development of the Flinders Doctor of Education (post 2014) is driven by two key imperatives of the knowledge economy. In the first instance the Doctor of Education has been elevated to a level 10 award (AQF) with a view to producing workers for the new knowledge economy: involving the transformation of information and requiring high levels of education and responsiveness to change. In this sense the university itself is increasingly becoming an agent of economic growth – defined by the strong emphasis on the link between research, innovation and economic performance. On the second front this award is governed by strict deadline for their confirmation of candidature that compels the university to develop curriculum and pedagogies that ‘train rather than educate’ post graduates in research execution. In other words, an award that is built around producing flexible and responsive professionals, scaffolds that journey with increasingly instrumentalised and diminished learning environments.

Extending from this structural analysis of the award and its position in the university is the exciting notion of curriculum renewal. In this context the traditional disciplinary divisions are challenged and opened for scrutiny. (Boud & Tennant, 2007) explain that the production and distribution of knowledge is no longer seen as being the exclusive preserve of the universities. There is a growing recognition that knowledge is produced in workplace context, which has been fundamentally progressed though the turn to practice in higher education.

Conclusion

For years, the field of education has struggled to strike a balance between the practice of education and research in education. Ed D's are often framed in terms of meeting the challenges of the 21st Century? What does that mean: in practice and for practice? Given that some economic and management response to the change are to close down, cut back and introduce standard forms of governance (e.g. 3 Year PhD) how can the innovative scholarly professional be educated to meet the cultural challenges of the 21st century when they are learning in rapidly instrumentalising higher educational contexts? To achieve this, we must ask ‘What is the place

of disciplinary knowledge in a professional doctorate?’ The challenge is to develop and document pedagogies of research that are working with questions of practice appropriate to professional work-related projects (Brennan, Lee & Green, 2009). It is not simply a call to reject the disciplines and institute new forms of disciplinary knowledge. After all it is the disciplines of modern university that discipline our thinking and lead us to ask the right questions. For what is in question in a situation of super complexity is neither knowledge nor skills but being. (Barnett, 2004).

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T38 Learning for change: Academic experiences of international Vietnamese PhD students in Australian universities

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Researcher development in doctoral education is a challenging process. Candidates have to navigate a ‘journey’ – a process of increased understanding and learning (Lee, 2011), and produce an original contribution to the academic community. However, it is also ‘a process of identity formation, which involves crossing a kind of borderland, transforming an identity as an experienced, highly skilled professional to one of researcher’ (Thomson & Walker, 2010, p. 19). Yet, little do we know about the identity formation of doctoral students; how they learn and change themselves through the process of research degree study. This paper presents part of the results of my PhD project which aims to investigate international Vietnamese doctoral students’ learning experiences and identity development in Australia. The research is based on 30 in-depth interviews with recent graduates and late-stage Vietnamese PhD students from a number of Australian universities. The theoretical framework for analysis builds on the idea of transnational space (Rizvi, 2010), global social imaginary, adult learning theories and the concept of ‘identity-trajectories’ (McAlpine, 2012).

Keywords

researcher identity, PhD journey, international doctoral students

Background

This research revealed that the PhD journey is one filled with both opportunities and challenges. It is through this process that students’ sophisticated researcher identity is developed, transformed or deformed. These developments are affected by both their national and global attachments, and their imagined future.

Identified themes from the research

Academic adaptation

Academically, many of the students interviewed for this project have issues adapting to the academic culture and learning about the standards required for a PhD thesis. This is a result of these students coming from a completely different academic culture and having little experience in real research work. Even for those who have previously undertaken research or overseas studies, starting a PhD project in a new research environment in a second language is never completely smooth transition. As found in previous studies (Aitchison, Kamler & Lee, 2010), academic writing is a difficult skill which requires them to develop throughout the process. Also, some of them had difficulties dealing with the supervisory relationships but have learned to work on it to the benefit of their studies and professional development.

Researcher identity development

The findings of the study reinforce the relational view of identity, in which identity is 'the synthesis of self-definition and definitions of oneself offered by others' (Henkel, 2005, p.157). Doctoral students' learning and thinking cannot be separated from their understandings of who they are, who they wish to be and who they are becoming (Cotterall, 2013). The student participants' narratives reveal that the PhD journey has been an exploration of a researcher-self, in which they build up their research knowledge, confidence and passion. They have come to understand what research means, how it should be carried out to the disciplinary and ethical standard. Vital to their confidence and construction of a researcher identity is external recognition and validation within the disciplinary community. They reveal themselves as now confident to carry out research in their field and make contribution to knowledge.

Researcher identity transformation

For many of the interviewees, the PhD has provided the opportunity to not only strengthen their professional knowledge and skills but has transformed how they see themselves in their future. They have no problem imagining a professional career outside of Vietnam and view their graduate education as having made them globally mobile. Thus, the PhD has become a springboard for a future they did not expect before their commencement. For these students, a completely new identity has been constructed – one that enables them to aspire large and global.

Researcher identity deformation

However, for some students the PhD journey has been an exploration that has shown that they do not really fit with a research career, thus raising the questions of whether they have developed a research identity. It is found that even though many of them love the research job and want to be involved in research work, their future vision either does not reflect or does not offer this ideal, especially if they return to Vietnam to work as a government civil servant or a university lecturer. In this case, they either do not want to develop a research identity or if they do, this identity runs the risk of being deformed or challenged.

Changing as a person

Most of the interviewees acknowledge the changes in their non-academic self. They are now better at time management

and balancing life and work. They have become more resilient, humbler and tolerant with others. The long period of time staying in Australia has changed their mindset of what a good and worthwhile life should be.

Conclusion

I have found that what the candidates gain from their PhD journey is beyond expected disciplinary expertise and research skills. The way those interviewed see themselves as a researcher or a professional at present and in future has changed. Many of them have developed a more sophisticated researcher identity, as a result of disciplinary validation and increasing confidence. They have become more ambitious and optimistic about their research or academic career. However, some of them do not have the confidence to fully embrace that identity due to the working conditions and available resources that they imagine they will enjoy in the future.

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T43 Building Community and Commitment through Structured Peer Interactions

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Keywords

peer interactions, overcoming isolation, academic community, doctoral commitment

A sense of isolation may detract from the academic experiences of doctoral candidates and contribute to academic failure and attrition (Lovitts, 2001). In response, institutions organise opportunities for peer interactions through research higher degree training and informally through group writing sessions. These interactions usually require access to campus, effectively precluding some distance students. In addition, students who are rural may be the sole academic within a region, compounding their sense of isolation.

Further research can understand the way isolated doctoral students can source social and academic support. This study informs about an inquiry to address the support needs of students whose candidature is threatened by a sense of isolation.

The inquiry considers our accounts as two doctoral candidates living in the same rural region. We are enrolled with different institutions and disciplines, and at different stages of candidature. Despite differences in distance from our respective universities, we have both participated in an array of skill development programs, online interactions and conferences that afford peer interaction. During our initial contact at Heather's institution to attend a writing workshop, we agreed to connect to exchange drafts on a regular basis as a commitment to increasing our written output. This study seeks to understand the beginning and development of our peer relationship and the ways in which we have developed our interactions to suit our needs as rural candidates similar to Gregoric & Wilson (2012).

We used a collaborative auto ethnographic to understand our peer relationship. We generated biographical text that we analysed and compared to the peer support literature. In each of our texts we wrote about our respective experiences including our history of connecting with peers and our intentions and experiences. We each wrote about our academic experiences as rural off-campus candidates. Towards the end of each text we described our perspectives about one another and speculated about the elements that have led to our growing sense of collegiality. We analysed our texts using themes derived from Driscoll et al (2009); *knowing ourselves*; *knowing our environment* and; *knowing each other*.

In knowing ourselves, we identified our peer relationship with frequent interactions as an antidote for the geographical, social and intellectual isolation we experience

[I] was privileged to be able to contact individuals in [my] academic network for support when ... there was a drastic need. (J)

[we] swapped emails about life events and issues, how we were feeling ... as well as work drafts. For me this personal connection was extremely important. (H)

Our reflections show our hopes that a peer relationship would assist with existing gaps in our networks, skills and environment.

Reflecting on knowing our environment broadened our understanding of how community resources impact on our research journey and our capacity to influence underserved populations. Heather found that a peer relationship helped her become conscious of her academic environment and the relationships that sustain doctoral learning:

good, professional supervision, sound relationships with our supervisors, interaction with ...people in our field (H)

J's personal and her research focus is her rural presence and community: *as rural people often do, I valued [H] as part of my residential community... I had often wondered ...if there was a possibility of [local] academic connections*

As we explored knowing each other, the theme of collegiality arose and how our mutual efforts toward each other's academic accomplishment in turn has social benefits for our communities.

we both seem to be centred on assisting the life chances of those who are most marginalised in Australian society (J)

[J] began our relationship through generosity, sharing resources she was aware of, that were relevant to my own thesis (H)

Auto ethnography helped us to understand what we brought to our peer relationship, how it benefited us and what it means to us. It gives us insight into each other's motivations, our synergies and potential for joint projects. We speculated that our separate research topics overcomes any concerns about plagiarism, permitting greater trust and engagement between peers. This bond is one of the foundations on which we are building our commitment to achieve our writing goals and completing our dissertations. Our findings recognise the ways in which our relationship is integral to our sense of academic community and is anticipated to contribute to our sense of commitment that will sustain us until completion. Our analysis shows that important areas of compatibility in our peer relationship are; similar approaches to research; shared personal values and; similar visions about post-doctoral social roles. Choosing a peer for continued structured interactions is therefore a deeply personal matter.

We argue that structured peer interactions have many benefits and should be supported and encouraged. It has led to plans that will shape our future efforts together and given us hope for the possibilities that peer relationships can bring to others. However, compulsory and 'top down' institutionally imposed programs are unlikely to deliver, as the nuances afforded by personal rather than institutional values are intrinsic to the success of the relationship. In conclusion, we encourage anyone contemplating structured interactions with a peer to commence and see where it leads, while continuing to negotiate the terms of such interactions. An auto ethnographic reflection is one way to deepen a sense of peer collegiality and purpose to strengthen commitment to doctoral completion.

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T46 Penumbra: Doctoral support as drama: From the light side to the dark side. From front of house to trapdoors and recesses

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Keywords

supervision; penumbra; doctoral students; support; learning

Introduction

Much international doctoral learning research focusses on the personal, institutional and learning support provided by supervisors through supervisory dialogues, managed relationships and the 'nudging' of robust, conceptual, critical and creative work (Wisker, G., Robinson, G., 2009). Others consider formal and informal learning communities supporting students in their research journeys, and roles played by families, friends and others, sometimes offering encouragement and sometimes an added stress. However, little has yet been explored, exposed and shared concerning the often unofficial, largely unrecognised range of meaningful others variously supporting students' doctoral learning journeys in terms of research, writing and editing. Some which we term the 'lightside', provide legitimate crucial support with construction, sharing and articulation of knowledge, but some represent the 'darkside', verging on plagiarism, substitution of effort, bad practice. We identify those in support as resembling a 'penumbra' a light around the main activity, and adopted an analogy of dramatic production roles to explore work of the various cast and production team supporting PhD students' work.

Theory, methodology and methods

Ongoing research on the 'penumbra' of support springs from experience and observation, theorised using Lingis, (1994; 1998; 2007), Kristeva (1988), Vygotsky (1978), Lave and Wenger (1991). Conducted using narrative interviewing of a range of 'others' in the 'penumbra' supporting doctoral student research journeys (5), and students and graduates who have used such support (6), it explores range, extent and kind of support, and issues of ownership, identity, ethics, authenticity, community. Dramatic production and theatre offer analogy to explore the variety of performers and acknowledged or hidden support involved in producing the doctoral work.

Penumbra, dramatic performance-roles

We identified roles, and actions, some aiding the production, some substituting for the student's effort asking who are those in support? who are the players in the penumbra of unacknowledged help. There are many positive, supportive meaningful others including family members, translators, editors, research assistants and fellow doctoral students, critical friend who read and discuss the work, offering comments and improvements, supporting clarity of expressions. There are

still others, academics, external partners and friends, acting as unofficial supervisors. These recognised and legitimate supporters are an acknowledged 'penumbra', lightside, front of house giving time generously, supporting and encouraging students, offering introductions and networking.

Frontstage the Director /producer of the 'performance': appointed supervisor/s, critical friends who legitimise / read the thesis, members of seminar groups, copy-editor taking out typos.

Backstage A community of critical friends including husband / wife / mum/sons and daughters etc. The institutional organisation underpins students' support for acknowledging personal and intellectual advice, making links between supervisors, institution and students. Programme administrators might play a significant role backstage keeping track of students' development with complicated spreadsheets indicating stages, helping interpret supervisors' writing or language (if not the student's).

'I decipher what the supervisor has written. I help them understand it and sometimes I translate it'(A)

Sometimes they gloss interpretation of supervisors' comments. The translator, the editor who partially rewrites / interprets text.

Backstage both communities and 'guardian supervisors' play parts in community learning and encouraging support groups:

'I have been involved in designing and giving workshops on research methods, writing, conceptualizing ideas, structuring the architecture of the thesis, giving individual guidance and tutoring.'(B).

In the context of intercultural learning, the translator is also backstage, playing

'a role of support--helping not only in translating literally, but also in counselling how to elaborate on specific concepts which are culture related'(B).

'I have been involved in negotiating between supervisors and students, bridging the language barriers, sometimes simply helping decipher the supervisors' email or handwriting, or explaining what might the supervisor mean in his/her messages, as well as bridging the culture gap or explaining the academic culture.' (B)

Some edit students' work, proofread, serve as sounding boards, providing empathy, containing anger and frustration, helping make choices – qualitative or quantitative research? Interviews or focus groups? providing encouragement, suggesting solutions to problems or difficulties, searching for materials and articles, helping in phrasing and rephrasing, adjudicating:

'Sometimes funny situations would occur when the students were reluctant to tell their supervisors the truth about an issue arising during the PhD process ... and then the student would want to consult with me whether to conceal this from him or not.'(D)

The darkside

The work of some totally hidden supporters and enablers could fall into the darkside of the doctoral process, those who ghost-write the PhD, turn vague thoughts into a thesis, whose work could be seen as encouraging deceit, and unethical behaviour if passed off as that of the student.

The area of most concern was the dark recesses (like the ghost in Hamlet). Research assistance can become a 'stand in' role and many agencies actually write the thesis.

Conclusion

Like actors, PhD students should have appropriate support in addition to that of their supervisors, to enable dialogue, knowledge exchange and construction, and final presentation. They all have their part to play in the drama that is the Ph.D. but questions arise concerning what is legitimate and what illegitimate collegial, or individual academic support? When support is replaced by the 'dark side' of substitution, we must ask 'whose PhD is it?'

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T50 A group supervision process: Reciprocal benefits for students and supervisors

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Abstract

We report on the use of group supervision processes as an adjunct to conventional individual student-supervisor interactions. We conclude that this practice is pedagogically advantageous and increases the efficiency of research higher degree (RHD) supervisory practices. We present our approach from both student and supervisor perspectives.

Keywords

group supervision; skills building; peer mentoring

Background

The purpose of the PhD is changing. Traditionally, it has been considered as an academic apprenticeship – preparation for

employment as a university academic. Now it has a much broader set of purposes and outcomes (Freyens, 2010; McGagh et al., 2016) and those outcomes demand different types of experiences during candidature (cf Mobray & Halse, 2010). We argue these skills are developed in authentic situations that we can model.

Towards a New Pedagogy of RHD Supervision

While traditional models of supervision posit an expert supervisor mentoring a novice student, contemporary scholars of the RHD experience argue against isolated silos of supervisory partnerships viz. a 'student acolyte learning from expert supervisor' (Spiller et al. 2013, p. 833). Supervisors do share their wisdom of experience through conversations, but students need not be limited to the experience of one supervisor, nor even to the experiences of many academics. Student conversations generate peer support and, we argue, lead to on-time completions, a more enjoyable and less stressful experience, greater personal accountability, and support for publication and thus entry to the academic and wider research world (Buissink-Smith Hart & van der Meer, 2013).

Group processes in RHD reduce isolation and provide support for students in managing the emotional work of engaging in the research journey. Emotions are an integral aspect of all education including higher degree research. They impact on RHD students' perceptions, thinking, communication, self-efficacy and motivation, and we seek to accommodate them in our individual and especially in the group processes that we articulate here.

We implemented this group approach because of the changing higher education context and the consequent demand for greater efficiency. We face increasing student numbers and more diversity in purpose and students. We responded to student requests for a group experience and we proceeded from our own experiences as RHD students. We based the initiative on an examination of the scholarly literature on the doctoral experience and the intuition that it was worth trying. Our aim is to support the RHD student's transition from student to researcher.

The group process

This initiative does not replace current practices, which include weekly School-wide research seminars that have both a scholarly and social function, university research education workshops and courses and one to one supervision between students and their advisors; rather we took a deliberate approach to leverage and enhance current institutional RHD education. The group process we describe functions in parallel with individual supervision.

Monthly meetings involve two short presentations by RHD candidates highlighting current problems or challenges in their research. This might be a concern about a methodological issue or a trial run of part of a research proposal or conference presentation. Other issues addressed include how research questions can be effectively framed, how a theoretical framework is constructed from a body of literature, or consideration of ethical issues that arise in a research design.

The group has established its own evolving culture; it is collegial, challenging, exploratory, inclusive, and scholarly. It exposes all participants to diversity and difference. In particular, there is an

active interest in making comparisons between home country education systems and their diverse research methodologies. The group discussion is lively, honest, constructively critical, seeking evidence and reasoned argument.

Student voice: why we do it

Over time, we as student members have reflected on the group and its impact on candidature. Consistently we have come to the conclusion that group interactions are beneficial academically, practically and socially. Academically, the group interactions involve discussion of ideas, opportunities to trial presentations, and encouragement for publication. Practically, the group facilitates discussion of 'study as work' (Hughes & Tight, 2013) and research management strategies, in which peers provide practical tips and advice on problems they have solved.

Socially, the meetings provide 'group therapy.' All students are anxious at times, and sharing one's concerns and experiences provides support and overcome the isolation that students feel when working on their own research topic. Time is a key issue. We meet monthly for 2 hours. While it is 'never long enough' it is an appropriate dose.

Our group has about 16 members and each meeting would have typically 12 participants. This is about as large as we can comfortably manage. It provides diversity and breadth of support while remaining focused on individual challenges. We do however, think we have reached an upper limit of group effectiveness in terms of size. Importantly, the group also includes two or three supervisors, who can mediate peer-advice, and we think this is also a good balance. The group does need this level of input and there is the opportunity to use supervisors to take common issues to other forums within the school and university for resolution, while ensuring that the dominant interactions are with peers.

Conclusion

We argue for the development of a mindful approach to higher degree research at a departmental level. A pedagogy of supervision must begin with an understanding of the changed purposes of the PhD and its diverse career outcomes, while retaining traditional values of the PhD as an individual journey of self and academic discovery and as work that has economic and social obligations. We propose a pedagogically driven model of supervision that meets students' needs and achieves some efficiencies.

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T 55 The challenges of teaching a research higher degree communication skills topic at a central level

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Abstract

In a research higher degree setting, candidates complete a discipline specific research degree administered at the central level. Graduate schools often hold the responsibility of providing training to improve the generic and transferrable skills of candidates. However, there are a number of challenges in providing such generic training to a diverse group of candidates with differing needs. This paper draws on the experiences of teaching 'COMS9001: Communication Skills for Research Higher Degree Students', a topic recently introduced by the Office of Graduate Research at Flinders University. The topic focuses on writing and communication skills in the context of work already being produced for candidates' own research, and provides practical skills in dealing with structure, argument, expression and grammar. It is fully assessed, and taught as either a semester-long topic or as a two-week intensive class. This paper explores the challenges of teaching such a diverse range of students, by categorising that diversity along three broad axes: communication skills, discipline, and point in candidature.

Keywords

communication skills, RHD candidates, generic skills

Communication skills

While an RHD candidate should already have a high level of basic communication skills, there is still a wide variance within that. The types of problems that students encounter are also highly variable. This raises important questions about which students should be targeted, and whether this diversity can be managed or covered in a single class.

The main question along this dimension is whether or not the topic should be targeted at remedial skills or advanced skills. Originally, the topic was built out of various workshops focused on high level communication skills, on expressing complicated ideas, and the genre expectations of academic writing. However, the kinds of students that enrol in such a topic are mostly those that perceive themselves to have a problem.

Even looking at remedial skills, the kind of problems common among students with a Non-English Speaking Background (NESB) are very different from those from an English speaking background. NESB students can have problems with English that are obvious to English speakers, but that their supervisors

are ill-equipped to resolve. These students are therefore highly likely to be referred to a class on communication skills.

One way of dealing with the disparity is by getting the native English speakers to help assist NESB students in their work as part of the workshop process. This has a number of benefits: it can foster peer support and cross-pollination of ideas, it can give native speakers experience and skills in future assistance of colleagues and students, and it also allows the helpers to develop higher level explicit knowledge of those parts of language only known implicitly before. On the other hand, over-use of this technique can take the focus off of higher-level skills and place it on basic grammar, it can create a feeling of irrelevance for the helpers, or could even create a sense of unpaid labour.

Discipline

Students in the class came from a variety of disciplines, each with their own peculiarities. High-level writing skills, according to Starke-Meyerring (2011), are inextricable from the genre or the discussion. As an example, research in the humanities and the social sciences will often involve applying a theoretical approach to an idea. Those different theoretical approaches often involve quite different forms of writing. There is not simply one genre, the humanities paper, with different content, but each one of these different theories involves their own way of discussing and moving towards truth.

This suggests that a generic class may not be the right way to go; however, there are also problems with leaving it up to the supervisor. As both Starke-Meyerring (2011) and Paré (2011), make clear, supervisors are often so steeped in their own genre that they are unable to express what is required of that genre. It is merely, in their minds, 'good writing'. This can be seen as a reason for an external viewpoint, but it needs to be one that understands how different styles of writing and different conversations develop.

Point in candidature

Students varied widely as to how far along in their candidature they were. There were some students who had only just enrolled, and others who were turned away from the class as they were due to finish before the end of the class. This brought with it widely differing needs. Some students were yet to complete an induction, and were not yet truly acquainted with the university processes, or their discipline, or really their project. As the topic was designed to workshop material, this also meant that some students had not yet developed material to that point. This was particularly the case in the intensive form of the class. The intensive nature does allow for, unsurprisingly, an intensive workshop environment, but in two weeks it is simply impossible to plan, research, revise and edit a serious paper, thesis chapter or research proposal. It also complicated assessment, as the assessment was the development of one of these products.

Conclusion

In order to deal with these challenges, a workshop approach was taken where students could work on papers within their discipline, and differences between disciplines discussed openly, rather than dictating firm rules. An individual approach was taken when providing hands-on assistance, where more time could be spent on remedial skills for those who needed it and higher-level writing and editing skills for others. Assessment was based on a piece of

research that was relevant to the students' stage of candidature, be that a research proposal, thesis chapter or journal article. This approach allowed each student to benefit from the class and expand their communication skills. It is clear that further research is needed for the development of this and similar topics, and we propose a follow-up study of those students who attended.

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F01 Conceptualising an integrative doctoral curriculum

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Keywords

doctoral curriculum, industry-collaborative PhD, entrepreneurship

Various new forms of the doctorate have emerged in recent decades with the aim of better preparing researchers for employment in both academic and industrial settings (Park, 2005; Boud and Tennant, 2006). Many such programs have responded to perceptions that candidates need to acquire a wider range of 'transferrable' skills (Kiley, 2014) and, increasingly, competencies related to entrepreneurship and the commercialisation of research (Wellings, 2014; McGagh et al., 2016). Efforts to augment traditional doctoral models have meant that 'hybridized' curricula have increasingly been adopted (Thorlakson, 2005).

This presentation reports on work undertaken to conceptualise such a mixed curricular system—that of the ARC Centre in Biodevices, which is an ARC Industrial Transformation Training Centre, funded in 2014. The Centre provides doctoral training in engineering biodevices, diagnostics and other areas of medical technology at Swinburne University of Technology. Its program is unusual in a number of ways, especially in its combination of a 'biodesign' focus (Yock et al., 2015), an industry-collaborative component (Borrell-Damien et al., 2010) and an emphasis on pedagogies designed to encourage entrepreneurship and research leadership (Williams Middleton and Donnellon, 2014). The first year of this doctorate comprises an extended and interdisciplinary topic development process, whereby candidates establish commercial industry drivers for their proposed research in clinical or industrial settings, followed by screening, ideation, design and 'path to market' planning stages. These are scaffolded by integrated coursework. Candidates then 'pitch' a fully developed proposal and business plan to a pool of prospective business partners before finalising arrangements for the industry-collaborative project they will pursue over their remaining candidacy.

Given the innovative nature of the program, its leaders wanted to explore a range of options in relation to program evaluation criteria and quality assurance. The purpose of the current study was to capture complexities underlying the program's formalised design and to explore them in ways that would contribute to this evaluation process. With this in mind, we decided to use Activity Theory to delineate the Centre's doctoral curriculum and, in particular, to focus strategically on competing tensions in its underlying activity system (Engeström, 2009; Yamagata-Lynch, 2010). We conducted interviews and a group meeting with the program's leadership and design team and analysed participants' discourse, both thematically and in terms of Engeström and Sannino's (2011) typology of 'contradiction' elements. Our analysis led us to the two following key areas of debate that govern various tensions between the curriculum and other nodes in the activity system:

- How can candidates achieve self-directed, personalised research outcomes in a more structured program? (Conversely, how can structured learning opportunities be designed and presented in ways that enhance self-efficacy in research?)
- How can quality be rigorously maintained in a dynamic interdisciplinary setting? The curriculum involves a novel accelerated approach—especially in its first year, which includes structured intensive phases. In some ways this approach breaks with past conventions around what can be achieved in three years.

Our presentation explores the team's discussion of these issues in terms of a range of cross-cutting themes, including clashes with traditional approaches to topic creation in bioengineering projects, various other problems in pedagogy and evaluation related to the Centre's interdisciplinary focus, and concerns around time, given the accelerated nature of the program. Many decisions in the curriculum design process had been implicitly or explicitly informed by the team's responses to these overarching questions, which continue to be salient in the context of the ongoing program. Solutions the team came up with in light of these issues included value-adding through creative and multidisciplinary teaming, flexible coursework solutions, extensive support (including provision of a PhD coach and two layers of industry mentors) and a range of strategies to help candidates maintain focus in the face of complexity. The areas of tension around hybrid doctorates and interdisciplinary research that we identified in our study are not trivial—although in some senses they are not altogether new to doctoral training. They are however 'writ large' in this model, as one of its academic leaders said, and they are likely to remain considerations for its ongoing program evaluation and risk management. We would expect this to be the case for other emerging doctorates with a focus on industry collaboration and entrepreneurship, and we feel that more research is needed in relation to quality assurance in this arena.

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F06 Preparing supervisors to support doctoral writing in Australia: absence, uncertainty, and diversity

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Keywords

doctoral writing; supervisor training programs

We report on a small Australian study investigating centrally provisioned support to assist supervisors in the development of their doctoral students' writing. The scoping study was funded by the Association for Academic Language and Learning (<http://www.aall.org.au>). Despite significant expansion of 'supervisor training', the literature continues to identify doctoral writing as a significant challenge to both students and their supervisors (Amundsen & McAlpine, 2011; Kamler & Thomson, 2014; Paré, 2011). The project establishes the extent of institutional provision and the kinds of programs/ courses/ workshops delivered, identifying the curricula, 'teachers', successes and challenges of these offerings. To complement publically available information retrieved from university websites, key stakeholders from 27 institutions were interviewed. In total, data from 33 Australian universities was collected, and it is this material that informs the comments below.

Our mapping of the current supervisor development offerings in Australian universities indicates that there is enormous variation in what is covered by the training; who delivers the material and who attends; whether it is compulsory; how long the sessions are; and the mode of delivery (that is, face-to-face, online or blended). Interviews revealed that most facilitators regard this type of professional development is best presented via pedagogies that focus on conversation, discussion and reflection, rather than attempting to dictate 'correct' supervision practices. This has important implications for the ways in which online programs need to engage participants in ways that will be most beneficial for supervisors. It is also apparent that, in seeking to establish best practice in research supervision, it is necessary to allow the specificities of context to determine what will be most effective for particular disciplines, projects and students.

We were particularly interested in discovering how supervisor development programs approached the issue of helping supervisors improve their efforts to develop students' writing. This too turned out to be patchy, with some universities placing considerable emphasis on this element of supervision in their programs, while others treated this fairly cursorily, preferring to provide writing development directly to students themselves through other services. Information gathered from university websites and from interviews indicates that a very broad range of topics is covered in the current programs. Many described their development programs as helping supervisors understand how to 'support' the writing, but it was not clear precisely what was meant by this. Others were more specific, explaining that they covered topics such as: thesis writing (form, genre, structure); writing processes; reading; editing; ESL/international students' writing needs; feedback; publication; plagiarism; and writing groups.

The research confirms that significant challenges remain regarding pedagogy, curricula, facilitator expertise and uptake of programs. Those interviewed indicated that development programs were useful in providing both new and experienced supervisors with effective strategies for helping their research students navigate the complex demands of the contemporary research environment, and recent research confirms this

(McCulloch & Loeser, 2016). However, it appears that there is only limited will on the part of universities themselves to support such programs. Further, and perhaps more troubling, the field was characterised by significant uncertainty and disruption threatening even the most well-established models.

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F13 Under the wing: Getting into the habit to supervise with impact

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Abstract

Postgraduate supervision is an individualised, exclusive 'care' (pastoral) relationship. Its prolonged and intimate nature render it a distinctive kind of professional relationship. The unusual blending of the professional and the personal make supervision 'particularly complex (and potentially difficult as well as pleasurable)' in comparison to other forms of university pedagogy (Grant, 2005: 6). The ways in which supervisors' pastoral care roles are used to achieve certain regulatory aims, while also protecting students - taking them 'under the wing' - are the subject of our presentation. We discuss the notions of pastoral power and 'confession' as a means of illuminating an ensemble of therapeutic discourses including particular modes of dialogue, observation, assessment, and documentation. Through an analysis of Foucault's concept of pastoral power in this realm of the unpredictable and unknowable domain of intersubjective relations, we interpret student and supervisor interviews obtained from an Australian university to identify the strategies supervisors use to safeguard students against the risks and uncertainties of thesis production (Knowles, 2007). Reading these accounts at times, guardedness, withholding and filtering were used to avoid what both parties were afraid to say or hear. We argue that possibilities for mismatched expectations

can lead to painful contradictions and disappointments, or a loss of faith - in the work, in the self, in the other – that alert us to the fact that any undue privileging of the intersubjective can distort other dimensions, such as the need for impersonality and detachment when assessing students' writing (and responding to supervisory feedback).

Keywords

pedagogy of supervision; supervision meeting; confessional; writing and feedback; pastoral power



Mother Supervis(eri)or with her acolyte Sister Barbarica/Barbitchka (Confessions Performance 22nd April 2016 QPR)



Sisters of the Order of Immaculate Deceptions (Confessions Performance 22nd of April 2016 QPR)

The confessional performance

The live 'confessional' performance, which takes place in a simulated confession box, allows a deeper consideration of the themes of the abstract by creating a sense of forced perspective through juxtaposing themes of judgement and intimacy, intellectual rigor and personal support. The characters depicted – Mother Supervisor and Sister Barbitchka – satirise some of the current preoccupations in higher education: impact, timeliness, supervisor accreditation, autonomy and self-discipline, measurement and productivity. The dramatic trajectory of each performer is signified by the solemnity of the pastoral relation as the nuns move through the confessional stages from the act of contrition ('the dictating mouth') to the assignment of penance. The primary task for the confessional mode of dialogue is to represent the 'pastoral relation' through the use of therapeutic discourses with their potential to restore individuals to a state of being normal ('forgiven') through specific individualising mechanisms. The sparse set design, austere costumes, and dim lighting highlight the monastic, cloistered and isolating nature of dyadic supervision. The shifts in the dialogue - from the confessor who sits in judgement while taking care of the confessee's soul, in exchange for information, trust and obedience to a higher authority - are pivotal techniques for obtaining intimate knowledge and promising improved well-being. The performance offers the audience a chance to reflect on the contradictions of being taken 'under the wing' through discerning the ambiguities and tensions embedded in the supervisor's position as 'pastor' and 'critic'. The script reflects our ongoing research interests in research supervision as a cultural practice and the complex ways in which institutional power relations are played out.

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F36 The Engaged PhD: Lessons learnt and paths to follow

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Keywords

research degrees training; student experience; employ-ability; research skills

Introduction

The University of South Australia is committed to transforming the PhD in order to increase the employment prospects of

graduates beyond academia. The pressing need to foster such graduates has been reinforced recently by the review of Australia's Research Training System undertaken by the Australian Council of Learned Academies (ACOLA). The review report explicitly supports broader transferable skills development as a necessary aspect of HDR training, and addresses the benefits of students having industry exposure and experiences (McGagh et al., 2016).

The University of South Australia introduced the Engaged PhD in 2014 for commencing full-time research degree students in the Division (Faculty) of Health Sciences. The Division is home to three large and successful schools: Pharmacy and Medical Sciences; Nursing and Midwifery; and Health Sciences (five allied health disciplines). The flagship research entity within the Division is the Sansom Institute for Health Research which hosts 24 discrete research groups spanning cancer, public health, lifestyle, pharmaceuticals, neuroscience and mental health.

The aim of the Engaged PhD is to develop transferable career skills, complement the research experience, and enhance the global capability of graduates. Consequently, the program offers a negotiated package of coursework, skills development and experiences which candidates undertake in 3 stages, across 3 years of candidature. Since the Engaged PhD's introduction in 2014, candidates have completed stages as relevant to their commencing year. Importantly, candidates are facilitated to select one of five career-related pathways upon which to structure their experiences. The identification and selection of a pathway is negotiated with supervisors, research degree coordinators and via an annual interview with the Division's Dean: Research. Pathway choices are:

- Academic
- Governance and Policy
- Global Outlook
- Research Enterprise
- Clinical Practitioner

A blended (choice of two) pathway is also an option.

The stages of the Engaged PhD are as follows:

Stage 1: Skills development: six workshops enhancing development of transferable skills relevant to research, and more broadly;

Stage 2: Pathway training, with a focus on skills development relevant to the selected pathway;

Stage 3: Pathway engagement experience, with a focus on understanding careers in the selected pathway.

Students are expected to compile an e-portfolio of their Engaged PhD experiences.

Evaluation of first two years of the Engaged PhD

Data were collected via the Dean: Research (CW then SH) who held individual interviews to track individuals after the completion of each year; and by the Dean's Office, tracking participation in identified workshops, training sessions and experiences. Candidates also had the opportunity to record their experiences in an e-Portfolio.

In the first year (Stage 1), 21 current candidates completed Stage 1, including participation in master classes in analytical methodologies, project management and finding funding. Workshops were offered to develop communication, publishing and career development skills (see figure 1 for a summary of the frequency of activities chosen). Thirty-one second-year candidates have completed Stage 1 and Stage 2. The total number participating currently is 52 of a possible 60 candidates. The reasons for non-participation were mainly (n=6) students enrolled on an external basis, where time on campus was already restricted; or participation (n=2) in a similar development program through an external project partner.

Students have elected to engage in one of the five pathways – refer to Figure 2. Twenty-two have selected a blended pathway, twenty have chosen a single option, and ten are still under negotiation. Within these specific pathways, candidates are guided to construct a series of experiences to support their training and development needs. These may include further coursework options; for example, existing courses/MOOCs, or Learning Employment Aptitudes Program (LEAP) modules. Worth noting is that no student has selected Governance and Policy or Global Outlook as a stand-alone pathway.

Stage 3 of the Engaged PhD will involve future third year candidates identifying appropriate work experience or community engagement linking their identified pathway with future employment e.g. academic teaching contracts, internships, international visits or industry placements.

From the interviews with students, the following themes were identified:

1. Ensure 'mandated' sessions are quality offerings, flexibly delivered and well-articulated;
2. There are different levels of need within the cohorts – e.g. when English is a second language, tailoring for different discipline expectations;
3. Supervisors are not necessarily engaged: passively or actively;
4. 'Good' candidates (and supervisors) are doing it anyway.

Future plans

From our evaluation and deliberations with key stakeholders we have determined the following actions to promote future successful implementation, uptake and outcomes: Firstly, we need better supervisor engagement, to ensure that all students are supported in their participation in the Engaged PhD. Secondly, we need to more clearly articulate creative ways that requirements can be met, and coordinate with University-wide strategies around industry and end-user engagement/partnering to facilitate placements and experiences. Thirdly, we need to deliver internal training programs that are flexibly delivered; clearly articulated for different levels of need and augmented by well-vetted external offerings. Fourthly, we need to investigate other options for collating the evidence for these experiences, in forms that future employers appreciate. Finally, we will possibly re-think the pathways in light of limited uptake in some cases.

Figure 1: Frequencies of participation in Stage 1 activities.

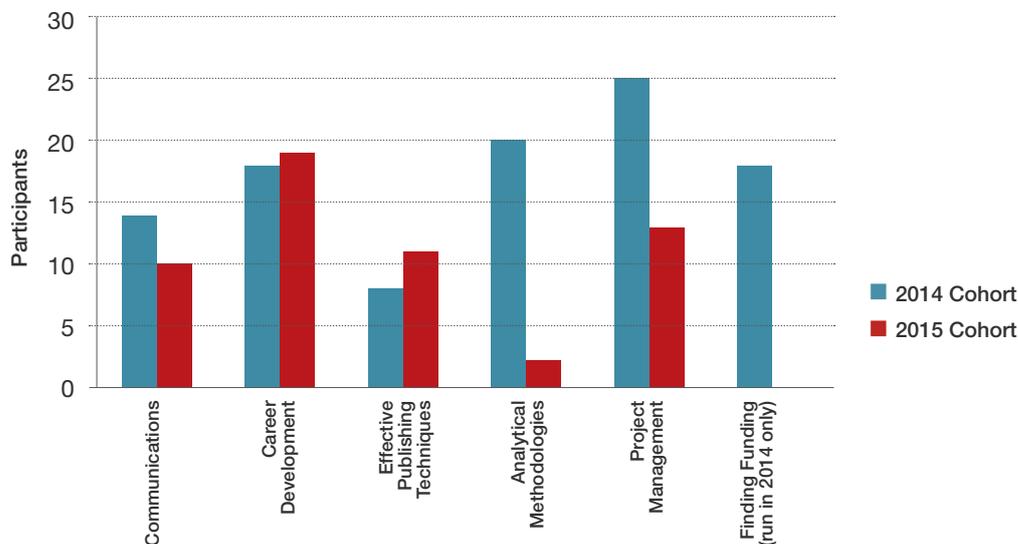
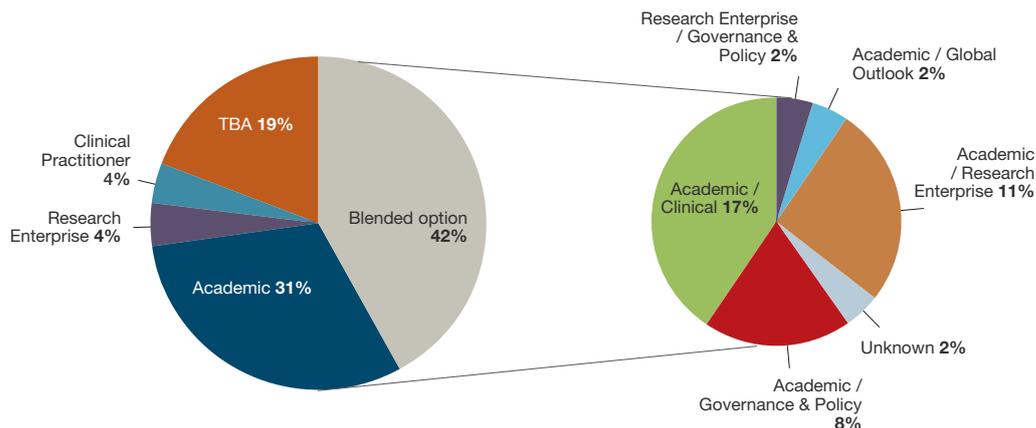


Figure 2: The chart on the left show the distribution of chosen pathway. The chart on the right depicts the breakdown of the blended pathways (42% overall).



Conclusion

We have found the Engaged PhD a timely and valuable addition to our HDR offerings in the Division of Health Sciences. Careful evaluation has allowed us to reflect on facilitators and barriers to implementation and to the ultimate usefulness of the program.

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F44 HDR Café: A Group Supervision Model for HDR Students

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Abstract

Supervision is a critical factor for student success and satisfaction with the HDR process. At the University of the Sunshine Coast three supervisors have developed and implemented a group supervision model to complement regular supervision practice and to provide a space for students to get to know each other and to support each other on their journey.

Keywords

HDR supervision, collaborative cohort model

Introduction

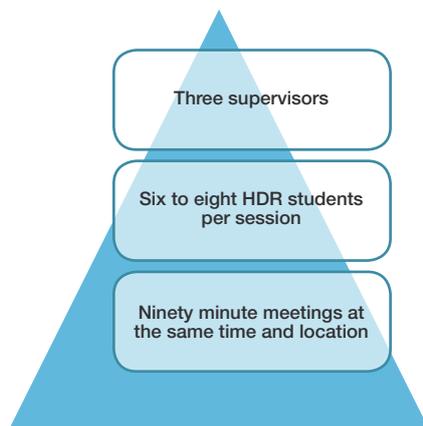
Traditionally the supervision of HDR candidates has been undertaken using an Apprentice Master Model (AMM). In this model, candidates learn by observing and undertaking research and being given feedback from their supervisors verbally and in written form. Although the AMM has worked well in many cases there are disadvantages that may contribute to non-completion rates.

An alternative group supervision model, referred to as the Collaborative Cohort Model (CCM), has been used in some disciplines but is not frequently practiced by all. CCM encompasses a supervisory relationship between the candidate and supervisor, as well as between the candidate and peer group.

The CCM has been found to have several advantages, including: feelings of less isolation, exposure to a breadth of knowledge around topics and methods, development of critical feedback skills, increased thesis quality and reduced supervisor workload (Burnett, 1999; Buttery & Ruchter, 2005).

This paper outlines the experiences of a group of HDR candidates who are part of a CCM the HDR Café, at the University of the Sunshine Coast.

Collaborative Cohort Supervision Model



Results and discussion

Group participants provided the following answer to the question 'What is the benefit for you (as an HDR candidate or supervisor) to be in this group?'

- 'Doing PhD is isolating. I've never felt isolated thanks to this group.'

- 'Input from other supervisors than my own is very valuable.'
- 'I get additional input from other students.'
- 'HDR Café gave me back my Mojo and helped me with my motivational deficit. It was good to talk to people who are in a similar situation'.
- 'Meet interesting lovely people. Rejuvenates your interest.'
- 'Gives us time to speak, learn and share.'
- 'Having three supervisors present makes it more enriching.'
- 'It is a much more efficient for us as well. We probably do more in 90 minutes with all of you than 30 min separately.' (Supervisor)
- 'It is not exclusive to individual supervision but it is complementary.'

The feedback received suggests that regular fortnightly group meetings increased efficiency and effectiveness of monitoring progress for both supervisors and HDR candidates. Due to the shared supervision model, the supervision sessions continued regularly, even if one or two supervisors had other commitments on a certain week. The candidates benefited from the expertise of supervisors who were not on their supervisory panels, yet had valuable contributions. Finally, the HDR candidates have identified other colleagues who were either more advanced or on the same level of progress and started working together and supporting each other.

Conclusion

With theoretical support from social cognitive theory and distributed leadership the initial experience suggests that the CCM can be efficient and effective for HDR candidates in similar disciplines. The feedback from candidates and supervisors from this USC group confirmed that this approach can be an efficient complement to regular supervision practice.

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F46 Identifying challenges in South African postgraduate support

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Keywords

South Africa; postgraduate support; challenges

South African postgraduate schools recently identified the four major groups of challenges that counteract their support programmes, namely scholarly, financial, supervisory and

political confronts. This was presented in poster format (Figure 1) and introduced the results of a discussion group existing out of directors of postgraduate schools and Deputy Vice-Chancellors (DVCs) of research, innovation and/or postgraduate studies of 80% of South African higher education institutions (HEIs), including rural and urban, residential and non-residential, established and new, as well as, high- and low-ranking institutions.

The diversity and extent of these challenges are emphasised by the statistics from recent studies commissioned by, among others, the Centre for Higher Education Trust (CHET), the Centre for Research on Evaluation, Science and Technology (CREST), the Council on Higher Education (CHE) and the National Planning Commission (NPC).

Scholarly challenges are confirmed by statistics that indicate that less than 1% of undergraduate first-year students will eventually graduate with a doctoral degree; of the less than 20% of successful grade 12 pupils who enrol for higher education studies, more than 50% drop out before obtaining a qualification; that less than 40% of doctoral candidates graduate within 7 years of their initial registration and the vast majority of the rest never graduate at all; 60% of doctoral candidates study part-time and therefore take 50% longer to complete their degree than full-time students; and 67% of HE students are first-generation students without historical advantages (Cloete, Mouton, & Sheppard 2015).

Financial challenges are confirmed by statistics that indicate a 75% decline in GDP spending on research in the climate of a

1% national economic growth rate; that 80% of the 2016/2017 institutional budget cuts might be on human resources; that a 25% employment rate and poor career advancements strongly influence the investment value of higher education and motivate families to pressure students to start earning and support their children, spouses, parents and extended families (Cloete, et al 2015).

Supervisory challenges are confirmed by statistics that indicate that a mere 40% of South African academics hold doctorates; that the 271% increase in doctoral students overpower the 145% increase in doctoral supervisors (1996:2012); and apart from the more than 50% of academics who will retire within the next decade, more than 50% of the newly graduated leave academia and/or the country (Cloete, et al 2015).

Political challenges are summarised by the government's belief that more doctoral graduates are needed to successfully address the imperatives of growth, efficiency, transformation and quality in South Africa; whereas academics believe that growth, efficiency, transformation and quality of education are needed to produce more doctoral candidates (Smit 2015).

The purpose of the research is to investigate phenomena in order to inform policy and decision-making, and to eventually benefit society. As one of the independent government agencies with research support as a priority, the National Research Foundation (NRF) of South Africa declares that its mandate is to promote and support research through funding, human resource development and the provision of the necessary research facilities in order to facilitate the creation of knowledge,

Directors of postgraduate support units of 80% of South African HEIs identified 

4 major challenges that counteract South African doctoral support

| SCHOLARLY X | FINANCIAL X | SUPERVISOR X | POLITICAL X |
|--|--|---|---|
| <p>0,03% of first-years complete a D</p> <p>39% of doctoral candidates graduate within 7 years</p> <p>60% of doctoral candidates study part-time</p> <p>67% of HE students are first generation students</p> <p>50% longer to complete D part-time than full-time</p> | <p>75% decline in GDP spending on research</p> <p>1% national economic growth rate</p> <p>80% of HEIs' budget cuts on HR (2016-2017)</p> <p>25% employment rate poor advancements</p> <p>Families pressure students to start earning</p> | <p>42% of SA academics hold doctorates</p> <p>271% increase in D students (1996: 2012)</p> <p>145% increase in D supervisors (1996:2012)</p> <p>50%+ of academics retire within decade</p> <p>50%+ of D graduates leave academia/country</p> | <p>Government believes more Ds will address growth efficiency transformation quality</p> <p>Academics believe growth efficiency transformation quality will lead to more Ds</p> |

recommendation: informed and participatory decision-making

Emmie Smit • University of the Free State • South Africa
References: NDP 2030 <http://www.poa.gov.za>, CHET <http://www.chet.org.za>, CREST <http://www.sun.ac.za>

QPR CONFERENCE 2016


Figure 1: This extended abstract was presented as a poster at QPR 2016.

innovation and development in all fields of science and technology, and thereby contribute to the improvement of the quality of life of all South Africans (NRF 2006).

In addition, one of the sources of the data used in this paper, the CHE declares that its mandate includes

the providing of advice to the Minister of Higher Education and Training on all aspects of higher education policy, the developing and implementing of a system of quality assurance for higher education, the monitoring and reporting on the state of the higher education system, including assessing whether, how, to what extent and with what consequences the vision, policy goals and objectives for higher education are being realized and contributing to the development of higher education, including international trends, producing publications, holding conferences and conducting research to inform and contribute to addressing the short and long-term challenges facing higher education (CHE 2016).

This paper therefore recommends that the South African government consider the evidence collected by the research it funded, and that informed and participatory decision-making is considered.

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Keywords

doctoral throughput; supervision capacity; postgraduate support

Performing the word—transforming the research writer

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Abstract

Many theses are not a 'good read'. They might meet the criteria of originality, critical insight and independent research, but still not engage the examiner – who is, after all, a reader. The challenge for thesis writers is to meet the examiners' credibility criteria, but still write in such a way that the examiner wants to read on – wants to read the next sentence, next paragraph, next chapter. To address this challenge, Victoria University and Edith Cowan University run an annual Performing the Word writing retreat. For 6 days, at an off-campus location, we create a 'performative space' where research students from a wide range of disciplines experience the transformative power of words. The three facilitators – a historian, a scientist and a poet – share a commitment to inspiring and equipping thesis writers to engage their readers by pushing the boundaries on how we present scholarly knowledge. Structured exercises, one-on-one consultations, and informal peer review, provide strategies for going beyond the traditional 'thesis style' of writing that can limit the possibility of having a meaningful conversation with the reader. We will share these strategies and examples of how participants subsequently incorporate them into their research writing. Feedback from participants demonstrates the profound impact the retreat experience has on their perceptions of themselves as writers. They discover, or rediscover, a sense of excitement and confidence in their writing and their research. Many are transformed. All are motivated to write a thesis that is, indeed, a 'good read'.

Keywords

writing, retreat, performative, transformative, thesis

Red dots, yellow dots, orange dots. Dots, dots, dots. Although the story I am going to tell you is very personal, quite subjective, and has been altered due to the passage of time and loss of memories, it is nonetheless important in terms of setting the scene for the thesis which follows.

Everything started on the twenty-third of February in 2009 when I first landed in Australia from my home country of Mexico. I arrived into the hot summer of Melbourne: full of festivals, happy people, lots of colour, and printed with the happiness of a reconciliation process derived from Prime Minister Kevin Rudd's apology to the Aboriginal people. I have to confess I wasn't completely aware of the situation of Aboriginal people in Australia; I think not everybody was, not even now.

My first experiences in Australia were perfect, except perhaps for the fact that I didn't encounter any of the native people that I was expecting to meet. Where were they? I saw art galleries and souvenir stores. There were dots everywhere decorating boomerangs, didgeridoos, even key-rings. But, where were Aboriginal people?

A friend told me that I had to go north to experience a more cultural encounter. So I departed to Sydney. I have to confess that he was right. Close to the 'circular quay', I saw two Aboriginal people wearing traditional clothes, decorated in white body-paint, and playing the didgeridoo.

After that moment I decided to explore Australia more broadly in the hope to hear and experience the stories of the longest living culture in the world. I travelled to the Pinnacles Desert near Perth, the Great Barrier Reef off Cairns, Fraser Island, and I flew to the south coast of Tasmania. But nothing. Not even one Aboriginal friend or an Aboriginal guide. Just dots. Dots in every museum I visited, dots in every market I went, dots on every souvenir I bought.

Taking my last leap of faith, I decided to go to the outback, where I visited the iconic Aboriginal sacred site: 'Uluru'. It was my first experience admiring the rock-art paintings and listening to some stories about the 'dreaming'. However, despite being a place well known for its aboriginal population, our guide was not an Aboriginal person. The story at the cultural centre was slightly different, though. There was a section within it where Aboriginal artists were creating art. Nobody talked to them, and they didn't talk to us. It felt like although we were in the same place, we weren't 'together'. Perhaps this experience, in some small way, describes the history of Australia over the past two hundred years. Will full reconciliation ever happen? Is the combination of tourism and art one of the tools for this to occur? I did not know the answer at that time. Five years later, I am still unclear. Dots still appear to dominate.

The story you have just read was written by Trini, for the 2013 Performing the Word Writing Retreat. It later became the preface for her thesis. Writing a 400-word story is a prerequisite for attending the retreat - an idea from the late Greg Denning's famous ANU workshop *Performing on the Beaches of the Mind*, where participants have to

Take an event out of your research that is in some way critical for your thesis/project or part of it. Or a person or a place or an idea or an image or whatever. Transform it into a story—in whatever tense, whatever person, whatever voice you want. Gamble a bit. It is not going to cost you anything. Write it with the directness of a novelist, the choosiness of a poet, the rhythm of a musician, the colour of an artist. It might make a prologue to your thesis or a chapter of it. *Believe me [wrote Greg] it is not going to take you away from your work. It is your work.*

Some advice [again from Greg]. Be mysterious. Be experiential. Be compassionate. Be entertaining. Be performative. One more piece of advice. Be reforming. Change the world in some way with your story.

The graduate researchers attending the retreat have to read their 400-word story out aloud to the group. To perform it. And to prepare for that performance, they rehearse by reading out aloud for themselves first. To catch the rhythm, savour their silences, often, to cut their sentences. This goes to the transformative heart of the retreat—in performing their words, catching the rhythm, savouring the silences, students are becoming- writer, are experiencing what it means to use the written word to capture and convey the power of the spoken word.

Trini's 400-word story crystallised for her what her thesis was about, which is why she included it as a preface to her thesis. The examiner commented that it was 'particularly the preface that provided an overview of the researcher's interest in the subject area and her desire to better understand a part of Australian society that is often hidden or overlooked.'

Another retreat participant used his 400-word story to write a prologue and epilogue to his thesis, which, he proudly told us in an email, his examiners 'loved'. One commented: 'The prologue and epilogue ... provide the reader with a sense of how his experiences have motivated this research and shaped his approach to this research.' He added that his 'greatest lesson from the retreat is that theses do not have to be dull and can be crafted as an engaging narrative'.

Another participant highlighted in their thesis acknowledgements: 'From this one event, a weeklong retreat in the ranges that surround Perth Western Australia (WA)—we explored the transformation of the written word to embrace the performative. Staying in a remote location with limited access to the outside world, the five VU and ten ECU students wrote and shared our work creating a collaborative writing community.'

We have not had the time and resources to follow-up how many other Retreat participants go on to use their 400-word story as part of their thesis. What we know from the evaluations is that, for many, writing and performing their story provided them with new and deeper insights into what it is that they are researching, and why it is important. For many, the exercise resurrects the passion for researching their topic. Performing the 400-word story is one of the aspects that makes this retreat a unique and transforming experience for those attending.

Performing the Word Writing Retreat is a live-in retreat we run once or twice a year in appealing out of the way places, like Chittering Valley in WA or the sleepy seaside town of Queenscliff near Melbourne. It brings together twenty to twenty-five graduate research students from a cross-section of universities and disciplines. Over the past two years we have attracted students from VU, ECU, ACU, Monash, Swinburne, La Trobe, University of Melbourne, RMIT and University of Tasmania. The cost is moderate—about \$500 to cover accommodation and the first night dinner—and that is generally covered by the home university. All materials and the services of the three facilitators—a social scientist, a creative writer and a scientist—are provided by VU's Graduate Research Centre and ECU's School of Graduate Studies, whose deans appreciate the benefit of their graduate research students obtaining at a critical writing phase the support and guidance of three experienced research training staff, combined with the opportunity to network with other graduate researchers from a range of universities and disciplines. The networking and camaraderie is further enhanced by the students forming into teams to prepare meals for the whole group, with all the bizarre dietary requirements that often entails.

Selection takes into account stage of candidature—with preference given to students in the second half of candidature who have already done a significant amount of writing—and their reason for wanting to take part in the retreat, what they hope to gain from the experience, why experimenting with their writing is important to them, and what personal qualities they

will bring to the retreat. And if selected they have to write their 400-word story.

We make it clear that they should only attend the retreat if they are prepared to take risks with how they convey knowledge, are prepared to push themselves (or allow themselves to be pushed), and are willing to experiment with their writing and to immerse and lose themselves in the act of writing. We also make it clear that the environment, while challenging and intensive and even confronting, is also highly supportive, with other thesis-writers with whom to share their work and ideas, and three dedicated and experienced staff encouraging them to experiment and explore their creative depths as writers.

The experience of writing and performing their 400 word stories sets the scene for the week, with a mixture of intensive individual writing slabs interspersed with group interactive exercises designed to equip them with strategies for engaging with the reader: using words and phrases, metaphors and allusions, syntax and punctuation to intrigue their readers and present them with new insights and understandings.

Each morning after breakfast everyone comes together for a Writing Wake-up exercise – which is a 30-minute interactive session designed to kick-start the writing for the day. For example, on one morning we discuss the different emotions (both positive and negative!) associated with writing and then get the students to free write about one of their emotions. The rest of the day is punctuated with longer writing strategy exercises. These range from essential exercises on mapping out the thesis, grammar nuts and bolts, readability 101, making the text flow, bookending etc., to more creative exercises on connecting with the reader's imagination, the poetics of writing and the writing of poetry, and applying the performative writing process to producing a thesis.

Between exercises, the three staff facilitators work one-on-one with participants, giving feedback and examples for the students to then model their own writing on. Each day concludes with a review of the day's work and looking ahead to the next day. By the end of the week, everyone—the three staff and all the participants—are thoroughly exhausted, but also thoroughly exhilarated by the experience.

The retreats usually feature a guest speaker. Last year's retreat we heard from celebrated Australian writer Brian Matthews, who shared strategies for taking an everyday experience and transforming it into a memorable event. Towards the end of the week facilitator Rose Lucas gave a poetry reading at The Queenscliff Bookshop, where students mixed with residents of Queenscliff. Both occasions gave students a unique insight into the word-crafting skills of two accomplished writers, and inspired them to be more creative with their own thesis writing.

We know that theses in the library or online have been passed by the examiners. But how exciting are they to read? To what extent do they convey the thrill of discovering something new? How far have they served as vehicles for the candidate, not only to make a contribution to knowledge, but to do it in such a way that their words—and through their words, their ideas—will be memorable? How lasting an impression will their words make? How quickly will they find a receptive publisher without having to be fundamentally rewritten for an audience beyond the examiners? And, most importantly, has the experience enabled

the candidate to discover his or her own voice as a researcher-writer? For many theses and thesis-writers, the answer to these questions would have to be a disappointing 'No' or 'Not much at all'!

The retreat is an opportunity for graduate researchers to go beyond the 'thesis style' of writing, which can act as a powerful barrier against establishing a meaningful conversation with the examiner—who is, after all, a reader. We do not de-emphasise the critical importance of the need to demonstrate to examiners that the thesis is making an original and significant contribution to knowledge within a disciplinary framework, but we do contest the largely unreflective position that the thesis has to conform to the style of writing of all those other theses found on the library shelves.

The retreat does not offer a 'blueprint' for writing a thesis or 'fixing up' grammar—though there is some of that. It is an opportunity for thesis-writers to explore their creative depths, to risk trying something new with words and language to engage in a meaningful conversation with a reader—all within a non-threatening environment. What matters for a thesis-writer is to persuade someone to their point of view—not to accept it as their own, but to accept it as a credible point of view. But it's not all that matters. To experience how engaging with a reader goes beyond passing an examination. How engaging with a reader is having them want to read on—to read on beyond the sentence, the paragraph or the chapter that they've just read.

Engaging with a reader is intriguing them. It's using words and phrases, metaphors and allusions, syntax and punctuation so that their descriptions and analyses present their readers with a new insight, with the realization of a different possibility that they didn't have before. In short, we suggest that as writers they have the power to re-form the reader's understanding. The implicit message is that, in re-forming the reader, thesis writers are simultaneously reforming and re-forming themselves. Transforming themselves. Building an identity—for many, a radically new identity—as a writer as well as a researcher.

We know from the anonymous online evaluation—which last year had a 100% response rate—just how transforming participants find the retreat. Asked to rank on a scale of 0 to 10 how useful overall they found the Retreat, one of the 22 participants rated it 7/10, 2 rated it 8/10, 2 rated it 9/10 and 17 rated it 10/10. Even for the person who rated it 7/10, their comments were generally as positive and enthusiastic as those rating it 10/10. For instance, to the question 'Which exercises or aspects of the retreat were particularly valuable to you?' the response was: 'Student engagement in writing exercises were very inspiring—great opportunity to see other students' perspectives and develop a deeper understanding of knowledge. The environment of 'all about writing' is very motivating for me to keep writing, not only writing the research thesis, but writing about anything beautiful and worth to put down as words.' To the question 'How has the retreat changed your view, and how will you deal with writing in the future?' the response was: 'Writing is an art. I am more motivated to allocate time on crafting my ability of writing.' And to the final question 'Do you have any other suggestions for how the retreat could be improved in the future?' the person responded: 'Generally it was very good. The retreat in that beautiful small town, with intellectual discussions continued on all the way through, was

an energy booster for me.'

What the evaluations tell us is the extent to which participants experienced the retreat as a profoundly transformative experience—at intellectual, personal and social relational levels. What is evident is their sense of development as writers, and their palpable excitement at the prospect of developing further, using the tools they were introduced to during the retreat. What is clear in their comments is how their emerging identity as a writer impacts on and enhances their identity and capacity as a researcher. And what is also clear—and this is an experience that, sadly, many graduate researchers simply do not have—is how they found joy and excitement and positive benefit in their interaction with each other. From our institutional perspective, all of this augurs well, not only for graduate researchers' personal well-being and confidence in their capacity to contribute to intellectual life, but also for the quality and originality of their research outputs—their theses, publications and conference presentations. It has given us confidence that, in the future, PhD theses will be more than just undifferentiated dots...dots... dots... but will be engaging bodies of work that examiners, and wider audiences, will take pleasure in reading.

A doctoral researcher's network

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Abstract

The position for doctoral candidates coming to Australia from developing nations to do research based in the social sciences is complex. This becomes particularly evident when Actor-Network Theory (ANT) is used to understand consider how these students are placed. When a doctoral candidate has their proposed social (e.g. educational) research problem accepted as a viable and worthy of researching for the benefit of their country, they are also a participant with close connections to the question they are planning to research. This paper outlines and analyses the network in which Khambane, a doctoral candidate who has come from Laos to the School of Education at Flinders University, is an actor. Directly shaping his research are the conditions placed on him by the terms of his scholarship and the expectations of doctoral research at an Australian university. Also shaping his research are the actors influencing the education system in his country. Another key element shaping his work as a doctoral candidate are the knowledge and experiences he brings that will be applied to his reading, data collection, analysis and the writing of his thesis. Khambane, a graduate of the Laos education system, needs to understand each of these networks, and critique and analyse, as a representative of a network in which he is a new participating actor.

Keywords

research supervision, international students, networks

Introduction

There have been significant changes in doctoral education in recent years. One challenge in the supervision of doctoral

research students is understanding the situation of international students and finding appropriate ways to meet their needs. Actor-Network Theory (ANT) was chosen for the opportunities it offers for examining working with an international doctoral candidate, Khambane, and the range of influences acting on him. ANT offers an opportunity to understand that there are many actors in this candidature. It also has the potential to show that the words of explanation, advice and critique I and my supervisory colleague offer, understood in different ways by an international student. The communication between student and supervisors as we guide our student towards completion of their thesis is influenced by many forces, many which we are likely to not know about or consider at a particular time.

This paper includes a section providing the background to this case. ANT will be introduced as the research methodology. The data used is explained along with the process of developing the network surrounding Khambane. The paper concludes with discussion and some conclusions about the complexity of the position of international students.

The situation being researched

The School of Education at Flinders University hosts international students including from developing nations in the region such as Indonesia, the Philippines, and Vietnam. Each student brings a range of prior experiences to their doctoral research. This is in addition to the field of research and the research questions, which influence that nature of the research project and processes needed to guide them as they work to complete their thesis and submit it for examination. Students also have personal circumstances which influence shape their time of candidature, and often introduce added complexity to the task of supervision.

To better understand the complexity of the role of the doctoral candidates I have supervised to this point, and the students I am currently supervising, I have chosen to focus on Khambane as a current student. We have both contributed to this paper, initially through the writing Khambane did as he prepared his research proposal to meet a major initial milestone required of research students in the School of Education.

Khambane is a doctoral student who has come from the Lao People's Democratic Republic. He grew up in a village in the province of Savannakhet, near the centre of the country, located in relatively flat country between the key city of the province, and the mountainous eastern area adjacent to Thailand. While his parents are illiterate he was able to complete primary and secondary schooling in the province and then gained a scholarship to attend the National University of Laos in Vientiane, followed by a scholarship to study for a Master's degree in Japan. An Australian Awards Scholarship has enabled him to come to Flinders University for four years to study for a PhD after which he will return to work at the National University of Laos as a teacher of English. His research into educational reform in Laos, in particular the country's efforts to improve rates of participation and completion of primary school education and meet the Millennium Development Goals (MDG) and the new Sustainable Development Goals (SDG). He is seeking to understand the role of district level leadership in achieving these goals, and identifying factors that may be hindering achievement of these goals.

Data for this research project is drafts Khambane wrote as he worked towards completion of his proposal document. Given the qualitative nature of this research it is important there is evidence of the researcher, who they are, how they have come to be the person they now are, and how these will influence the analysis and interpretation of the data (Christians, 2011). Therefore, sections of text where Khambane wrote about himself, the research he was proposing, why it was important, and about providing details of his progress through the education system and his family background are relevant to his research project and suitable data for this research and to assist with answer questions about how his work as a doctoral research is influenced by other actors.

Methodology

Actor-Network Theory (ANT) facilitates the exploration of key influences in a system or network. Actors in a network are not necessarily human, or even visible entities (Latour, 1996, 2005). Rather, the term 'actor' is used to mean entities which have a force or the ability to act in the system being investigated. Latour explains that an actor is able to change what happens, or to alter the outcome of the activity or process in some way. Relationships between actors are recognition of the ways in which one actor influences another, and the ways in which influences can move in both directions. ANT provides a way to investigate social systems or cases, to strive to understand the political, social and cultural nature of a particular situation, in this case a case study of an individual student, Khambane (Baiocchi, Graizbord, & Rodríguez-Muñiz, 2013). This approach enables researchers to strive to identify, and subsequently, to develop an understanding of, the range of actors identified in the network, and to then go on think about the characteristics of the various actors, the nature of the relationships between the actors, and to critique the way the network operates.

Taking a cue from Latour's (1996) work it needs to be noted that there are limitations to the visual representation of the network developed to represent Khambane's position as a doctoral student. There is no indication of the strength or nature of the relationship between actors, nor is there an indication of their importance. A count of relationships at any part of the network is also not informative. A visual representation of an Actor-Network does not reflect the absence of space between actors, rather in the network developed actors are arranged in a way that is practical to represent visually. Despite these limitations the network developed as depicted (see Figure 1) has enabled analysis that was not anticipated.

Developing the network

For the first stage of developing the network knowledge of the system surrounding all doctoral students was reflected on and an initial sketch network was developed that included as actors, Flinders University, the Faculty of Education, Humanities and Law (EHL), and the School of Education (SoE), along with the Australian Awards Scholarship (AAS), supervisors, the student himself, and the thesis (the document which is the goal of the PhD journey). I added the thesis – the proposition, which is to be developed and supported by an argument, and which is sustained throughout the writing. This second concept of the thesis as a proposition is inserted as it has been a difficult concept for doctoral candidates to understand, and the

research objectives. The culture and history of Laos, which shapes Khambane's cultural understandings and values was also added as another actor in the network (Owens, 2007; Rizvi, 2010).

Drafts of the proposal document Khambane had prepared were then read and further actors were identified. These included the education system in Laos, comprising the Ministry of Education and Sport (MoES) which manages education at a national level, and the District Education and Sports Bureau (DESB) which manages education at a district level, and is specifically charged with the responsibility of managing primary education, and whose work is the focus of Khambane's doctoral research. Other additions were actors influencing education in Laos: ASEAN which, as a group of nations, has agreed on educational goals for member countries; the UN and UNESCO which established and have driven the goal that every child should have access to free primary education; and donor countries which are an important source of funding for education in Laos, and can have an impact on what financial resources available from year to year. As an important donor country this is the second representation of the Australia government as an actor in this network. As each actor was added to the network connections were added in the form lines with arrow heads at each end.

When this network had been drafted Khambane and I met to look critically at my work. Our discussions led to the addition of two key actors. The first Khambane pointed out that his family in Laos was important and had a role in his life as a doctoral researcher. In particular, they look forward to his return at the completion of his studies. He also identified his work place, the National University of Laos, and his colleagues there as a part of the network. We also decided that his country, the Laos Peoples Democratic Republic, needed to be represented, in recognition of the importance of the government and its influence on a range of other entities already included in the network.

Examining and questioning the network

The key actors in this network are the student (Khambane), supervisors (myself and a colleague), the education system in Laos (which educated Khambane and is now the focus of the research), and the thesis which is to be produced as the culmination of the research. Some key actors in the network located in Laos are Khambane's family, the education system, the Laos PDR, and the country itself with its history, geography, culture, and language. I have chosen to keep these core aspects of Laos together as a single actor, to signify the forces which have helped to shape Khambane as a Lao. While there should be no ordering of the actors in this case study, to facilitate thinking and then creation the network of actors that are part of the Khambane's work as a doctoral student, it was easiest to place similar types of items together. This was partly to facilitate the drawing of connections, and also depicting items in groups as they were identified as part of this system or case study. Having drawn the diagram, it was then realised that the actors largely located in Laos appeared together, clustered towards the right, with actors located in Australia clustered towards the left. That is, with the layout of the network as it is shown in the figure, a diagonal line could be drawn through the diagram, in the process, identifying key groups of actors in the network.

There is a contrast of culture signified by the diagonal line. While Khambane as an actor in the system is located above the line,

and is currently physically located in Australia for his studies, he is deeply influenced by the actors who are shown below the line. Some of the actors shown along the bottom edge of this representation of the network are from outside Laos. These actors are influencing what is occurring in Laos. The UN and UNESCO are the bodies which have instigated the goals of free primary education for all children, the Education for All (EFA) goals, and the development of the Millennium Development Goals (MDG) which have now been revised to become the Sustainable Development Goals (SDG).

To further identify groups of actors and the types of changes they are bringing to the network colour was added to the visual representation of the network. The actors depicted in grey, the Australian Government, its scholarship program of which Khambane is a beneficiary, and Flinders University and the faculty of Education, Humanities and Law both provide the means for Khambane's study, and the conditions of this study. That is, these actors are the source of the regulation underpinning his candidature, through the conditions of his scholarship, in the requirements and conditions of his visa to remain in the country, and through management of his candidature. The thesis, in its three constituent parts, is shown in blue. The actors shown in green influence the education system in Laos, creating the educational goals the country's government is striving to achieve. The actors coloured light orange have provided Khambane's social and cultural resources, values, language and world view.

Analysis and discussion

There is detail about the actor Khambane which is not depicted in the network. Khambane draws on a quotation from the prominent Lao scholar Maha Silo Viravongs,

I am a child of the countryside, born amongst of [sic] earth thrown up by the plough and growing up on the back of a water buffalo' (http://www.sila-viravongs.org/index.php?option=com_content&view=category&layout=blog&id=6&Itemid=7).

Khambane uses this quotation to highlight that he grew up in a poor family in a Lao village. The distance between that village and doctoral studies in Australia is large.

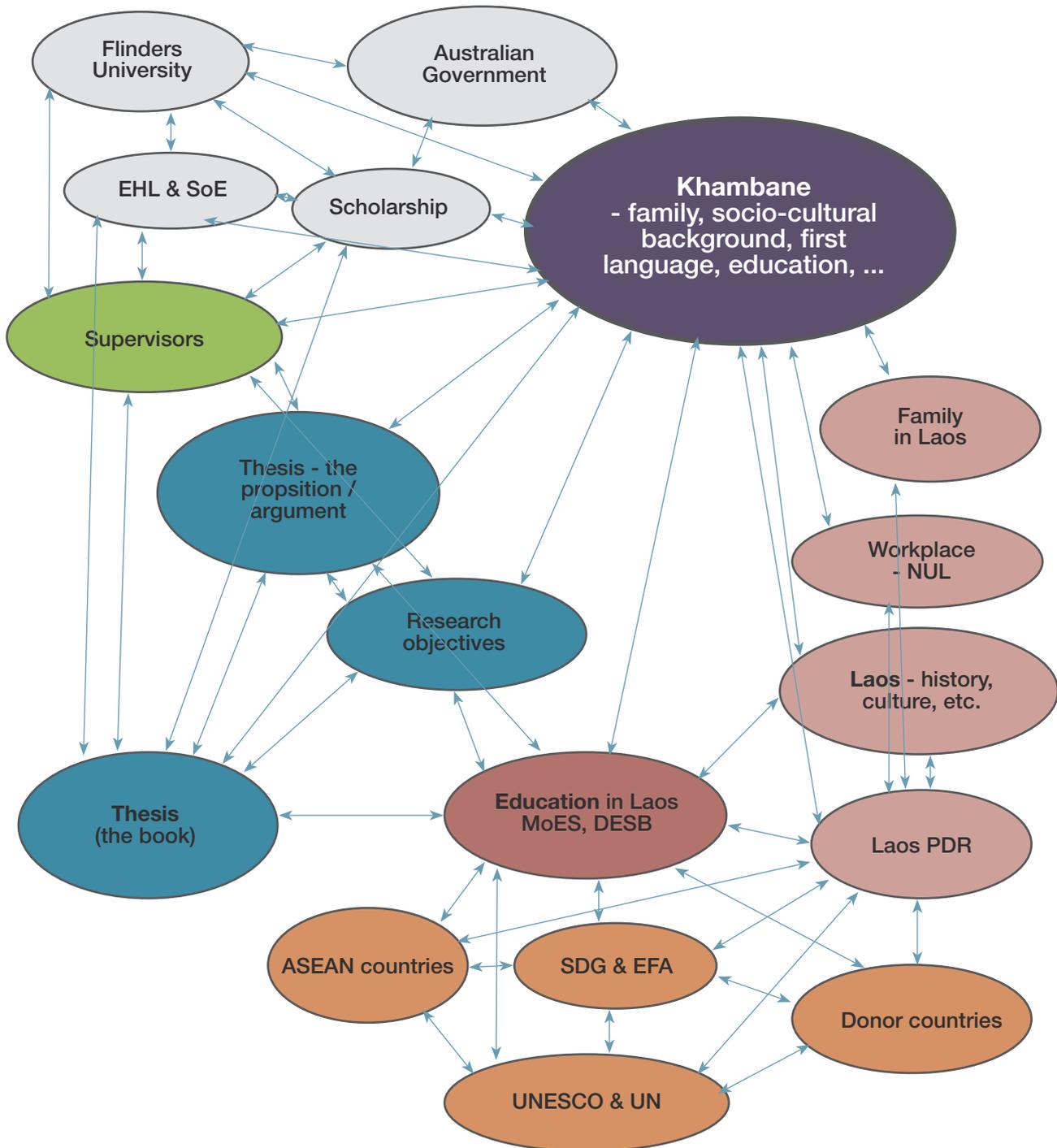
As indicated in the recount of the process of developing and redrafting the network Khambane pointed out that his family in Laos and his workplace, the National University of Laos, needed to be added as he felt the load of expectations from both groups. Reading literature about international students indicates these actors are usually a significant source of pressure (Leonard, 2010). It was revealed that Khambane is asked to financially assist family members in Laos. This is expectation of financial support, which extends beyond parents, is based on the knowledge that Australia is a wealthy country and therefore he and his wife are able to assist, and is not unique (Leonard & Becker, 2009). Rizvi (2010) points out that these pressures have been commonly experienced by international students for a long time, but today with modern communications family expectations can be communicated on a daily basis.

The expectation of colleagues at his work place, the National University of Laos, is that he will return with a doctorate. If Khambane returns without a completed doctorate, he will not

have the respect of his work colleagues or members of his extended family. The omission of these two actors from earlier drafts of the network is symbolic of my limited knowledge and understanding of the position of international students.

There are many pressures on Khambane as the actor at the centre of this network. There is a group of actors which provide the resources for doctoral research are also have a regulatory role ensuring studies proceed at the expected rate.

The expectation of a rate of progress leading to completion within four years is a struggle in light of the issues resulting from working in a second language and in an environment with different expectations about that nature of research. The Laos PDR is also an actor with a regulatory role, given that Khambane will return to his country with a completed research project that will be politically acceptable (Rizvi, 2010). Much of the power in this network resides with a few actors, and concerns about time become a focus of the power imbalance.



The omission from the first drafts of the two actors, family and work colleagues, viewed by Khambane as presenting significant pressure on him, both financially, and through their expectations, is symbolic of my limited knowledge about this international student. Through the discussion about these two actors and the work we have done together for this paper I have learnt more about Khambane's position as an international student.

Conclusion

It is important that supervisors of international doctoral students give careful thought to how they will guide their students to successful completion of their studies. This includes being aware of the wide range of pressures and expectations placed on them, both by the entities providing the resources for their studies and their family and social networks. Finding ways to understand and work with the social and cultural resources students bring to their research is also vital. Robinson-Pant's (2010) call for supervisors to get to know the characteristics of international students, including those which are cultural, seems important work for supervisors, particularly as they are commencing work with a new international student. Where there is limited knowledge of the culture of students and its implications for doctoral studies it is important to listen.

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Academic subjectivity and research writing

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Abstract

It is often assumed that doctoral students can be best supported by socialisation into academic culture, and that problems with writing arise from the individual deficiencies of students or perhaps poor supervision. The policy environment emphasises skill deficiencies and increased monitoring of students and supervisors, skills training to produce 'industry ready graduates', and interdisciplinary and end-user driven research. There has been less reflection on academic culture, its influence on academic writing, and upon the kinds of educational support required for both students and supervisors to produce effective research writing in the discipline. This paper reflects on insights raised within the higher education literature about academic subjectivity and its relation to writing and supervision. The paper links examples of ineffective doctoral citation and reading practices with discourse within academe about students as academic outsiders awaiting judgement from academic gatekeepers, and of research subjects as persons possessed of individual research 'capacities' decontextualized from specific discipline research practices and knowledges. The paper concludes that there is a need not simply to socialise students into academic culture, but to challenge specific presumptions within academic culture, and to support both students and supervisors in the take up of a peer to peer, discipline-based subjectivity in research writing.

Keywords

academic culture; supervision; writing support; academic subjectivity.

Introduction

The policy problematic of timely completions constitutes students and supervisors as the site of the problem in doctoral education, in need of administrative regulation, skill improvement or perhaps emotional management (Owler, 2010: 289-293). Within the higher education literature, there is increasing interest and a growing body of research about supervision, much of which focuses on improving supervisors' communication skills and their awareness of different styles of working (for examples see Mainhard et al, 2009; Li and Seale, 2007; Gatfield, 2005), or upon facilitating student reflection on the research process to develop independent professional researchers (see for examples Maxwell and Smyth, 2010; Pearson and Brew, 2002). It has been observed that how students see themselves, or their development of an academic identity, is pivotal to their success. Much of the work on the role of identity in doctoral work comes from socialisation perspectives, in which doctoral students are understood to

gradually learn the knowledge, skills, values and attitudes that determine professional behaviour in an immersion within academic culture (see for examples review article Gopaul 2011:11-12; Holley 2009; Boud and Lee 2005). Immersion in academic culture is still most often described in terms of inter-personal interactions and relationships with supervisors and other academics, which is then understood to foster the internalisation of a disposition that will manifest in good writing, among other effective research behaviours. Academic culture is not itself the subject of critique in these analyses, unless it excludes or marginalises students, nor is consideration given to the means by which the take up of research subjectivity can be supported by engaging with student research writing.

Scholars with backgrounds in applied linguistics, sociolinguistics and sociocultural theories of learning understand identity to be central to effective writing, and focus upon assisting students to adopt an appropriate research identity and narrative stance within their texts by working with writing (Kamler and Thomson 2006 and 2004 being salient examples in the higher education literature). In this paper I provide some examples of inappropriate doctoral writing and reading practices in order to complicate the view that 'problems' in student writing are born in individual deficiencies, and can be addressed simply by greater immersion in academic networks. The paper points to two discourses circulating in the doctoral space which support inappropriate writing and reading practices. The first constitutes doctoral students as outsiders of the discipline and of the academy, and supervisors as persons whose primary role is judging student work in order to grant or reject admission into the discipline and the academy (Lee and Green, 2009; Peterson, 2007; Green, 2005; Grant 2003; Johnson, Lee and Green, 2000). The second is a view of research as arising in abilities de-contextualised from the discipline, increasingly evident within policy discourse.

The discussion of student writing and reading practices that follows is based on ongoing rounds of reflection on work with PhD students' writing in the social sciences and humanities at the University of South Australia over a period of ten years. This work took place within a central student support unit involving reading student research writing and discussing students' questions about writing within, on average, about 100 individual appointments and 85 workshops per year.

One of the most observable struggles students experience in research writing is completing the literature review, defined here as that part of the research proposal, thesis or exegesis whose function is to situate the research within a disciplinary field of literature. The literature review is the most relational part of research writing, written in an inter-textual conversation with discipline peers within an international problem space.

One feature of the literature review writing of some beginning students is to refer only to papers on the precise topic area, with under developed representation of the wider concerns and approaches of discipline scholars working in the problem space. Commencing students may explain the rationale for this in the comment 'there is nothing on my topic, so what can I write about in my literature review'? Here the literature review is understood as a review of literature on the topic, rather than a review of literature leading up to or surrounding a problem space. Research is constituted as a relatively isolated activity in

which the student's work shares few links with other research. Omitting page numbers for specific ideas and inaccurate or incomplete reports of the findings or arguments of source material is also common. Close attention to, and accurate reproductions of the central ideas within texts is not something beginning students necessarily focus upon. Over referencing also occurs, demonstrable in the provision of references for the student's own observations of gaps in the field or within aim statements. For example: 'According to Smith (2014) little has been done on this topic'. This research will use grounded theory (Smith, 2014) to understand x (student's research focus)'. When encouraged to remove references in these instances and develop the literature review, some students will defend the citation decision perhaps commenting, 'everything must be referenced unless it is common knowledge', 'we are not allowed to have our own ideas', 'we were taught that we are not allowed to have our own ideas' or, for the latter example, 'I have to acknowledge it's not my approach'. In these statements, the justification for new research rests not on the students' own synthesis of the central conclusions of others, but on the authority of published authors. The suggestion seems to be that it is not the work you do, or your understanding of the ideas of others that matters in a justification of research questions, so much as who endorses those questions or approaches.

Students' reading practices for the research literature review sometimes suggest a dispersed reading approach in which notes are composed solely of quotations or paraphrasing of the non-central arguments or findings within another author's text, reflecting a reading practice driven by the search for affirmation or resonance of the students' own ideas. Some students will over attend to texts they 'like' or 'agree with' and ignore those they 'disagree' with, or which bear little relation to their immediate area of interest. Not surprisingly reading, and the writing that grows from it, can become an overwhelming and stressful experience, bringing feelings of panic and loss of control. The focus is on 'my work', 'my idea', 'what I find interesting', 'what supports what I am doing', 'ideas that provoke my thought processes'. The understanding of research and of the researcher reflected in this practice is one of lone investigator going where none have gone before. The field is read for inspiration to support one's own elaboration of an idea. The unsystematic and reactive process of reading this inspires shows itself in a shallow appreciation of the field, with typically underdeveloped or unconvincing gap statements.

In these examples, there is a sense in which the beginning student understands themselves as an outsider of the academy or of the discipline, who must find support for their own idea not in contrast and conversation with other research or scholarship within the discipline, but from direct support from published others. Authority rests with others, not with the student. This raises a question—how is the situatedness of academic practice within the discipline, and the recognition that one's own work is inevitably shaped and informed by previous scholars and researchers, not obvious to such a thoughtful and academically competent group of students?

I argue that the sort of misunderstanding of the task described here is not surprising given prevailing discourse about what it means to be an academic, and, by association, a student, and cannot be explained away as evidence of a students'

lack of critical thinking or research ability. Discourse about the academic subject often constitutes the student as an outsider to academe, on the liminal boundary of academic otherness, a novice or apprentice subject hovering at the nearest edges of the academy, awaiting judgement from a higher authority before being admitted to the status of knowledge holder (Lee and Green, 2009; Peterson, 2007; Green, 2005; Grant 2003; Johnson, Lee and Green, 2000). The impression of the task evident in student writing reflects a subjectivity that is offered by the academy itself, a 'culturally intelligible academic performativity' (Petersen, 2007:475), constantly negotiated and enacted within and beyond the supervision relation. As Green (2005) and Petersen (2007) comment, performing academicity involves being and becoming the ideal academic subject, and specifically the 'subject-supposed-to-know', an inherently unstable position 'caught between the Impossible and the Ideal' (Green, 2005:154). The supervisory role is saturated with metaphors of ocular power, and of doctoral research as discipleship and apprenticeship (Lee and Green, 2009) in which the supervisor's role is one of gatekeeper or judge, who must determine whether the student is worthy of admission into academe (Grant, 2003). As Petersen (2007:480) puts it, supervision becomes 'category boundary work' in which 'the supervisor is supervising, indeed overseeing successful appropriation of academic subjectivity while his/her own boundaries are being fortified, reconstructed or challenged'. An understanding of oneself as outsider is precisely the student subjectivity reflected in the student writing practices discussed above.

Engaging in academic culture does not in itself then necessarily encourage the take up an appropriate academic subjectivity. The constitution of academics as persons 'in-the-know' about research, and of students as persons not yet authorised as researchers, can manifest in PhD students attending conferences primarily to receive judgement from academics perceived to be authorities. Here the PhD student is performing the discursive role provided for them, that of student outsider awaiting rejection or acceptance by more authoritative and knowing academic others. In this sense, participating in academic culture does not inevitably inculcate a peer identity. Nor will it, to the extent that identity or subjectivity is reflected in writing, necessarily alter students' writing or reading practices.

The situation is complicated by the inter-linked themes of independence and originality that attach to research circulating in the doctoral space, inviting the subject to prove themselves worthy by not needing assistance or working in relation. As Petersen (2007:485) and Johnson, Lee and Green (2000) comment, the academic subject is constituted as independent, or at least as one who must eschew dependence, evidenced largely in the ability to work outside relationship, and significantly, without the need for close supervision. Economic rationalist discourse constitutes academics or researchers as persons possessed of an 'ability' or 'capacity' to work independently and at an original standard within unspecified contexts, including increasingly, independently from the discipline context (Bansel, 2011:550). When students conclude that research is about having their own original ideas unrelated to discipline others or context, they are, reflecting messages within prevailing academic culture. The constitution of research as an 'individual capacity' does not foster a practice as banal

as systematically engaging with the discipline, of recording and reflecting upon the key conclusions of others, of considering the way methodology shapes findings, or of synthesising different approaches to a problem space within a discipline or disciplines. To do so actually contradicts discourse about the need for research that escapes 'discipline silos', and of researchers capable of working in any context by virtue of their capacity for originality, creativity or innovation. Reading and writing habits inadequate to discipline requirements are not then born in student or supervisory deficiencies, but are symptoms of contradictions within academic culture about the relation of research to the discipline and to academic others.

Discourse about the academic subject which associates relationality with dependence, and, by implication, a questionable lack of research capacity or originality, not only obscures the situatedness of academic work, manifesting in inappropriate approaches in the literature review, it actively facilitates a hands-off supervisory stance. This explains the traditional supervisory practice of critiquing close to final drafts with little engagement in the drafting process. The performative defines the supervisory role not in terms of actions that produce research outcomes, but in a capacity to make a final judgement about the student's research 'capacity'.

Of course, academics and students regularly subvert the non-contextualised subjective positions and performatives discussed here, and re-invent more effective ways of understanding and enacting student, researcher and academic in the doctoral space. Lather suggests (1991:137-138) that intellectuals need to position themselves somewhere other than at the origin of what can be known or done, and somewhere other than as the solution to the problem of others' lack of knowing. This can be achieved by centring academic authority in specific critical practices. One does not in other words 'become' a researcher capable of judging other researchers, but possesses specific discipline and methodological knowledge, as well as skill in academic writing practices within a discipline, which can be shared in a sustained engagement with students.

The point that bears highlighting here is that effective students and supervisors work against the dominant performative described by the higher education scholars above, in resistance to it. It is not socialisation into academic culture that facilitates doctoral success. Doctoral success involves both students and supervisors subverting particular ways of thinking the academic subject. Subversion occurs when supervisors work with students as peers in close engagement. It is not more regulation, more networking, or more skills training to produce decontextualized innovations that is needed in the research education space, but hands-on support for students within the writing process, and supervisor development that supports supervisors' work with student research writing. Implicit within this, is the need to challenge both traditional academic and emerging policy discourse which constitutes research as an individual capacity and source of authority, decontextualized from discipline-based knowledge and academic others.

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Does constant technological innovation drive growth and social well-being? Some responses from economics, business, higher education and economic sociology

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Abstract

Innovation has become a key term driving change in higher education, particularly within the research and higher degrees' domain. The policy premise that productivity, economic growth and social benefits arise from wide spread exploitation of innovation is driving changes in research including the emphasis upon end users, industry-partnerships, research which can be commercialised, and research training that produces industry-ready doctoral graduates. While innovation is increasingly the primary objective of research policy, its economic conditions of emergence and distribution have not traditionally been subject to reflection within either educational lines of inquiry or government discourse and policy. This paper presents some objections to the prevailing policy view from economics, sociology and globalisation perspectives in education.

Keywords

higher education research policy; research skills; innovation; research commercialisation.

Introduction

The view that innovation drives growth and prosperity has concentrated policy attention upon science and technology based research, end user driven research, and research that can be realised commercially. In the past 20 years there has been concern in policy circles with an apparent disconnect between innovation and its economic exploitation, or of technology transfer from universities to industry, sometimes attributed to a lack of 'entrepreneurial capacity' or risk taking behaviour on the part of academics. An 'innovation-driven economy', in addition to the perceived need to prepare students for a variety of employment destinations (ACOLA report 2016), is also driving change in the doctoral education context. There have been moves to include industry experts on supervision panels and to provide transferable skills training to prepare doctoral candidates for industry. Graduate schools and research training are asked not simply to produce discipline-defined innovations for specific field contexts, but 'knowledge workers' capable of innovating in a range of contexts. Policy calls for research training in 'generic' or 'soft skills' including 'business and financial management skills, commercial acumen, commercialisation skills and intellectual property management (DIISR, 2011:22). The pervasive assumption underpinning policy is that economic growth depends upon knowledge, high skills and the economic benefits flowing from the innovations they produce, and that in order to boost the direct economic impact of research, academics should link more closely with industry.

This paper considers the research evidence for these claims. The paper reviews academic literature in economics and business, globalisation of education, and economic sociology

which takes as its subject the relations between innovation and economic growth, and the role of universities in this. The overall conclusion is that although we hear much from policy makers about the importance of evidence based policy, in fact, policy does not reflect conclusions in the literature. The paper develops the following key points:

- Innovation is distributed in systems which delimit innovative potentialities.
- Economic growth thrives as much, or more, on imitation as on technological innovation.
- Competition, not technological innovation, is the key to market advantage.
- The benefits of innovation are distributed globally and unequally.
- The higher education industry, not innovation, produces an economic advantage.
- Education, including social science and humanities knowledge, and not scientific innovation, is central to solving social and economic problems.

Innovation is distributed in systems which delimit innovative potentialities

Of course it is the case that the major technological revolutions that have shaped the modern era, including the industrial revolution; the age of steam and railways; steel, electricity and heavy engineering; oil, the automobile and mass production; and finally, information and telecommunications, have stimulated whole industries, often multiple industries. They have also produced technologies, infrastructures and organisational principles which have, in many ways, improved the efficiency and effectiveness of industry. However, these great technological innovations are clustered in systems and follow specific growth trajectories implying limitations for their own growth cycle as well as the possibilities for alternative innovations within the market (Peretz, 2009). At first there is rapid growth and expansion of markets and technological development, followed by the saturation of markets when designs and models become relatively fixed. Structures include inter-related products, production technologies, industries, inputs (such as energy or materials), and infrastructures which alter transportation networks for products, people energy and information.

The systems and structures introduced by radical innovations produce a techno-economic paradigm which shapes what comes to be 'common sense' about future technical, organisation and strategic innovations, as well as business and consumer choices (Peretz, 2009: 11). For example, mass production and automobile manufacture have altered the organisation of cities and transportation, most saliently the suburbanisation and spread of cities, and by association altered what is understood to be optimal, even 'inevitable' about the use of urban space. The process is self-reinforcing as new developments confirm existing practice and principles (Peretz 2009: p11). Existing paradigms then act as drags on potential new technological revolutions and must themselves be revolutionised in order for a new surge of development to begin.

Today, existing energy industries act to inhibit the development of green technology and the possible wealth, employment and social forms that might arise from it. It is not then constant innovation that produces the long growth cycles that characterise major technological revolutions, but a single innovation which is milked to its full potential, while other potentialities are prevented from entering the market and the cultural and social mind set. Innovation pathways are distributed in systems of innovations, whose structures interconnect in ways that shape the world blocking alternative innovative potentialities from emerging (Perez, 2009). The eighteenth century sociologist Gabriele Tarde observed that notwithstanding the transformations wrought by technological inventions, society actually develops on the rule of habit and fashion, or the repetition and imitation of existing forms (translated in Tosti, 1897), pointing to the influence of reigning techno-paradigms on the development of societies.

Before considering the role of imitation in economic growth, it is worth noting that the economic and social benefits arising from the major technological revolutions are not all equal. Since the 1980s there has been a decoupling of the wealth normally arising from increased productivity and real wages and household income. This is tied to reducing demand for unskilled workers as a result of technological advance (Brynjolfsson and McAfee, 2014). The unimpressive impact of computers on labour productivity led Robert Solow (1987:36) to famously quip: 'you can see the computer age everywhere but in the productivity statistics'. Employment has actually been negatively influenced by the computer age as unskilled jobs are replaced with machines and, increasingly, robotics, leading many social and economic commentators to speculate about the upcoming 'age of leisure' and how this will challenge and restructure our economies. The economist Robert Gordon (2000a) also observed that, in the later part of the 20th century, the computer revolution has had a lower impact on standards of living compared to other technological revolutions. The growth potential arising from current developments in computing is minor compared to the initial development of micro-processing, calculators, games, miniaturising, digitising, minicomputers, personal computers, software, telecoms and the internet. Now innovation in these industries involves miniaturising and enhancing speed, incremental improvements on basic designs and models (Gordon, 2000b).

Economic growth thrives as much, or more, on imitation as on innovation

Increasingly, at the tail-end or incremental phases of the current innovative cycle, the evolution of new designs emerges within production itself in a direct relation with consumers, and has little to do with universities and researchers (Thrift, 2006). Within the market generally, the kind of 'creativity' that produces profits has very little to do with radical inventions, or with university or discipline understandings of innovation, and much more to do with collective tastes and affects, or with the ability of products to produce, capture or reflect tastes and affective attachments (Thrift, 2006). Producers attempt to continuously conjure up experiences that can draw consumers to commodities by engaging their passions and enthusiasms, both by producing goods that resonate and by making those goods open to potential recasting (Thrift, 2006). Business aims to populate

life events with 'content that has some commercial resonance and gain through a general redefinition of what counts as value' (Thrift, 2006:302). This is not about newness, but about profiting from majority tastes, and has more to do with marketing than science and technology.

Competition not innovation is the key to market advantage

The considerable economic literature on technology transfer from university to business considers the attitudes and preparedness of academics regarding the successful commercialisation of their ideas to be one, relatively less important factor, compared to how the transfer is effected, what is transferred, the characteristics of the receiving party and of the transfer environment (Bozeman, 2000: 637). One way to illustrate the complexity lying behind this research is to observe the tendency for smaller, often more innovative firms, to lose market share and to collapse, while larger firms step in to reap the benefits of their innovations. This is the norm because the capacity of a firm to produce a profit and survive depends ultimately not on its ability to innovate, but to compete within the market place. Competitive advantage arising from innovation depends on two things, one the ability of the firm to capture intellectual property rights, or two, to manufacture at low cost, and to market, distribute and provide after-sales support within its own boundaries or by contractual partnership (Teece, 1986). Since most technological innovations are codified or complex in nature (knowledge about them is readily available and they depend on a variety of specialised functions) they cannot readily be secured in intellectual property agreements. Hence competition revolves around the specialised assets of a company, or perhaps a set of companies, relative to the product or service (Teece, 1986). Specialised capacity is typically lower for smaller, newer firms, than for larger, often multinational firms, which is why smaller businesses decline in numbers while multinationals expand their market domination.

This condition of the market also reinforces the first point. Successful competition produces not only growth, productivity and employment, but also the destruction of alternative technologies, products and firms, and the jobs and wealth they produce. Consider for example, the loss of employment and wealth produced by the camera and portable music players with the introduction of the 'smart phone', the replacement of jobs in newspapers by jobs in internet related fields. We have seen the replacement of the cassette tape with the compact disc, and it with web-based streaming, each shift entailing job losses, firm and business closures and the development of new jobs, businesses and firms. To presume that innovation produces growth is a simplification that fails to observe actual trends in the market.

The benefits of innovations are distributed globally and unequally

Perhaps the most obvious characteristic about the relation between innovation and growth is the unequal distribution of any economic benefits produced. To give a salient example, one of the key means by which firms succeed over smaller companies is by utilising the manufacturing capacity of nations where labour costs are relatively low. What we have seen on a mass scale in recent times is the shift from high

paid manufacturing jobs in developed nations to low paid manufacturing jobs in nations like China and India. But neither low-paid Chinese workers nor the new unemployed in ex manufacturing centres like the US can afford to buy the consumer goods produced in China. This points to the fact that big, often multinational firms operate in a largely deregulated global financial and economic environment within which they can exploit people and resources seemingly at will. Commentators on the globalisation of capital observe its predatory mobility—its ability to capture markets, control medias, hijack public resources and erode State sovereignties—as well as the 'runaway' quality of global finance in relation to national regulation, industrial productivity and the real wealth of specific societies, countries or regions (Appadurai, 2000). Much of the discourse of the World Bank and other bodies generating knowledge economy discourse and imposing deregulatory policy globally is driven by banks and vested interests which benefit from a deregulatory climate.

Economic growth, and, more importantly, the real economic well-being of people everywhere, has little to do with technological innovation, and much more to do with power, politics and economic and social policy. Economic observers of recent global financial crises highlight the problems ordinary people face from policies of deregulation of financial markets and the complex financial products they produce, quantitative easing (or printing money) to drive demand, and rising private and public debt relative to the failure of increases in real wages. Economic commentators commonly observe that the deregulation of financial markets since the Reagan era has led to unsustainable debt levels in many wealthy nations, artificial stimulation of markets via the production of cheap credit, and frightening bubbles in many parts of the world, ultimately threatening the savings and wealth of ordinary people everywhere.

One of the problems then with the assumption that scientific and technological innovation will deliver prosperity to all is that markets do not distribute wealth and other benefits evenly, whether they arise from innovation or not. We live in a world of economic advantage and disadvantage. Policies of deregulation and privatisation, and an increasing concentration of wealth means the gap between rich and poor continues to widen and the poor are everywhere vulnerable. The mechanisms of inequality go much further in explaining many of the world problems policy is concerned to address than simply the preparedness of academics to commercialise their ideas, or the availability of new technological applications for industry.

The higher education industry, not innovation, is associated with economic advantage

It is not the innovations that universities produce which gives developing nations their economic advantage, but the tertiary services they provide and their beneficial impact across a range of economic and social indicators, particularly for local economies. This points not so much to the economic benefits of innovation, but of high skills and education. In many developing countries there has been a shift from a manufacturing to a service, knowledge-intensive, based economy. One of these services is education itself. Comprehensive reviews of over 100 economic studies, mostly US based with some Canadian and European representation, since the 1970s (Bozeman, 2000;

Drucker and Goldstein, 2007) show that universities positively impact local economies and communities. Universities in and of themselves have considerable positive economic impact across a range of indicators including creation of knowledge and human capital, transfer of existing know how, technological innovation, capital investment, regional leadership, knowledge infrastructure production and influence on regional milieu (housing, employment, social cohesion) (Drucker and Goldstein, 2007). The effect seems to be linked to agglomeration, or the clustering of firms in related fields within highly populated urban areas bringing advantages of associated businesses and specialised services. Silicon Valley would be an iconic example of this.

A key factor in the ability to build up and capture the benefits of agglomeration in regional areas depends upon migration, or the inflow and outflow of students, faculty, researchers, administrators and others. Rich, developed countries, many of them English-speaking, tend to be the providers of high skills education globally, and they are also able to compete for and retain the best scholars internationally – the brain drain phenomenon. There is not, in other words, a free market for international students and skilled workers, and developing countries have faced specific disadvantages in building up regional concentrations of university supported research. Many African and Asian nations have not traditionally offered doctorates. The highest proportion of doctorates is produced in the US. Numbers in China are growing, but academics and researchers are still often trained in northern countries.

World Bank policy in the 1980s and 1990s forced nations to favour primary education over higher education leaving many developing countries disadvantaged in the global competition for producing and retaining skilled labour (Klees, 2008:315-318). These countries are left with unskilled labour and primary or minimally processed resources (sugar and textiles). ‘Free’ and ‘open’ markets have exacerbated global inequality leading to long term disadvantage. Those who benefit are elites able to access higher educational internationally, large multinational firms able to profit from cheap labour in developing countries, and Western economies which benefit from higher education and a larger share of high skilled workers. The picture is one in which the rich Western economies benefit, and entrench global inequalities in a circuitous manner, they are better able to attract and to retain students. They benefit economically from the higher education industry itself, as well as the spin off economic benefits it provides for regional economies. In many economies high skill technological clusters do not exist, and growth, if it exists, is driven by the exploitation of human capital globally, or primary resources, and the black market.

Education, including social science and humanities knowledge, not scientific innovation, is central to solving social and economic problems

Finally, it bears repeating, an old, but over shadowed point, given the current focus on science and technology—higher education and research, particularly within the social sciences and humanities, has an important role to play in economic and social well-being. The social sciences and humanities are important because they reveal, explain and challenge the mechanisms of inequality that determine the existing distribution

of economic and social goods. Discourse about innovation driven progress tends to assume technological fixes for world problems, overlooking political, logistical and practical solutions, but also the natural limits of time and resources that delimit the potential of technology to solve world problems (Feuer and Maranto, 2010). The problems caused by global capital do not typically require hi-tech radical inventions beyond those within our existing reach. Globalisation commentators point to the important role of education and academic research, and specifically accessible critiques of globalisation, within teaching and learning and research outreach activities as a central part of a strategy to resist global capital (Appadurai, 2000).

One of the implications of a concentration of Western or northern based doctoral education is the proliferation of their worldviews about under-represented areas, whose own world view is marginalised (Appadurai 2000). An important concern, about which policy has little to say, is whether universities can undertake their role of reproducing social and cultural forms when they are concentrated in particular cultural contexts. We hear much about preparedness for industry, but are graduates being prepared for the diversity of cultural contexts from which they originate?

The domination of global knowledge production by the West also means the proliferation of a particular historical set of modern research practices and a specific research ethic. It is an ethic which distances itself from politics and morality, or from subjective opinion, testimony, revelation and rumour within everyday knowledge, emphasising instead methodological neutrality in data gathering, systematicity, and meaningfulness as assessed by a discipline-based, mostly English speaking, scholarly community (Appadurai 2000). This ethic is required to command international credibility and research funding, and not only fails to marry with, but is a reactive symptom of unease about the multiple perspectives generated within the social sciences and humanities (Appadurai 2000). While the tendency of the social sciences to refuse to come to a position of neutrality, instead emphasising the perspectival nature of reality, their reference to cultural, theoretical and philosophical frames, while giving rise to unease in the ‘scientific’ mind, puts them in a better position to enable and to facilitate the inclusion of non-northern perspectives in research.

Conclusion

The cyclical and systemic nature of the radical innovations that have shaped the modern era highlight both their productive and their destructive tendencies. Examination of the workings of the market show that imitation of popular tastes and competition are far more important factors in economic success than innovation. The economic potential of innovation depends upon broad scale social, political, production and market forces well beyond the control of individual innovators. The economic and social benefits for local areas that arise from regional concentrations of technological skill and infrastructure are not dependent on entrepreneurial spirit and heightened innovation, but from the concentration of skilled and knowledgeable people and the industries that depend on them.

The evidence overwhelmingly suggests that prosperity for the common good, particularly the global common good, has little dependence upon innovation, and much more to do with

politics, power and economic advantage. The emphasis upon knowledge and innovation within policy reflects the desire of wealthy nations to support tertiary level service sectors in their own economies, within a general policy of economic deregulation that enables the exploitation of the labour and resources of poorer countries. The effectiveness of innovation policy depends upon a two pole global economy comprised of those with technological know-how and high skills within labour intensive tertiary services sectors and those without them whose cheap labour and resources can be exploited. Policies of deregulation and privatisation, and the increasing concentration of wealth means the gap between rich and poor continues to widen and the poor are everywhere vulnerable. If the educational advantage of rich nations is not to entrench northern country bias, and if we are to engage citizens in the political change required to redistribute prosperity, universities need to continue to invest in social science and humanities research, to educate people to understand the mechanisms that underpin economic and social inequality. The unequal distribution of wealth and social benefits remains an outcome of political processes, requiring political solutions. Educators in the doctoral space should not lose sight of traditional educational concerns and priorities about doctoral pedagogy and curriculum, although these may not be seen to be 'strategic' priorities within policy driven University agendas.

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iDARE Creative arts research approaches to ethics: new ways to address situated practices in action

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Abstract

As a 'new' research discipline, the creative arts challenges ethics understandings within the context of its emergent research methodologies and the interactive and polyvalent nature of knowledge produced this mode of research. In this paper we focus on a current learning and teaching project that attends to ethical know-how in creative practice research in order to address the gaps between institutional research know-how and the practices of creative practitioners in the world. Graduate creative practice researchers working in the university are required to observe the University's Code of Conduct for Research and adhere to the guidelines provided by the National Statement, however, practicing artists working in the community are not similarly constrained. Once creative practice PhD graduates leave the university, they are no longer required to gain ethics clearance for their work but use their own developed sense of ethics to make 'judgment calls.' Ethical know-how is situated, contextual, and a mainstay of all professional practices in action. In order to address the disjuncture between institutional ethics and compliance, what we call 'know-

what,' and the ethical know-how required in the real world by artists, this paper sets out the principles and an approach to developing ethical know-how. Through a case study that adapts real world art practice to the research context of the Academy, this essay demonstrates how institutional know-what can be brought into play with ethical know-how. We propose that 'the hypothetical' enables us to shift perceptions and practice around ethics. This approach raises issues specific to the creative arts disciplines and prepares our graduate researchers to become ethical and innovative practitioners in the real world.

Keywords

ethics; creative arts research; situated ethics; ethical knowhow; professional practice education

Introduction

This essay addresses the question of the development of ethical know-how in the creative and performing arts, asking: How might the ethics experience in the University setting prepare our creative practice research candidates for a professional practice outside the academy and engender the acquisition of 'ethical know-how' that will enable our graduate artists to negotiate ethical challenges in their careers? Graduate creative practice researchers are often ambivalent towards the ethics process because they are aware they are not subject to ethics oversight of their projects conducted outside academy. In the face of this ambivalence, we propose the notion of 'ethical know-how' in order to equip our researchers with ways of developing strategies to deal with the ethical dilemmas they face in real world practice. We set out the principles of ethical know-how and through a case study demonstrate how institutional know-what can be brought into play with ethical know-how through the pedagogical model of the 'hypothetical'. Through this approach, we are able to address issues specific to the creative arts disciplines and prepare our graduate researchers to make more ethically informed judgment calls.

Every graduate researcher working in the academy who engages in research that involves human or animal subjects is required to apply for ethics clearance before they are able to proceed with their research. Currently the application for and assessment of research ethics can be seen as a hurdle that a researcher must get over before the real work of the research project can commence. This 'set and forget' approach does not encourage the development of an ethos that will underpin professional practice in the world outside of academia. What does an ethical practice look like and how can we prepare our graduates to become ethical and innovative practitioners in the real world? How can we encourage the development of an ethical ethos that will underpin professional practice in the world outside of academia?

The aim of developing an ethical ethos is relevant to all graduate researchers working with human and animal subjects. However, while all disciplines who engage in research have processes in place to oversee research process outside of the academy, the creative arts are not similarly constrained. While artists and designers enrolled in the Academy are subject to the university's research ethics processes and procedures in 'real world' practice this is not the case (Bolt et al, 2010: 6). Here, the "true" arena of ethics determination is in the community—art viewers and the general public.' (Bolt et al, 2010: 5). In other words,

outside of the Academy graduates are no longer required to gain ethics approval and need to be equipped to make their own judgment calls. This raises a key question for the sector: How do we address the gap that exists between adherence to institutional research ethics and the development of a robust ethos for our graduates that enables them to develop ethical know-how when their research is no longer subject to the processes of ethical review?

Background

Creative arts education has been part of a unified higher education system since the early 1990s when the Dawkins' educational reforms combined the Colleges of Advanced Education (CAE) into the Australian university system. This policy radically changed the context of creative practice education from one of professional training to an educational model with the research trajectory. In the place of professional practice diplomas creative artists now gained degrees and progressed to undertake higher research degrees—Masters and Doctoral degrees. As a consequence of these policy initiatives, learning and teaching in the creative arts has undergone a fundamental transformation. At graduate level, creative arts practice was reframed as research, design and art (practice) was transformed into 'practice-as-research' and artists became researchers. In this sweeping change, creative arts research became subject to the processes and procedures that oversee all university research. As researchers and graduate researchers, artists became subject to the research ethics processes and protocols that are applicable to all university researchers (Bolt et al, 2010: 1-2).

This transformation has had consequences for both creative practitioners-as-researcher and also for the university. Firstly, the creative arts did not have the history or literature in research ethics to provide case studies, examples and precedents to help its artists-as-researchers and graduate artists-as-researchers confidently negotiate the university ethics process. Secondly, as a result of this short history, the University hierarchy still fails to understand and respond adequately to creative practice as research. In the research ethics context, without the history and existence of past case studies, the University Ethics Committees struggle to make determinations in relation to practice-led research projects. Finally, artists have not, until reframed as creative practitioners-as-researchers, had an 'investment' in the research process, or in offering stewardship the field of research ethics.

The impact of ethical regulation

In 2009 a pilot study conducted in the Faculty of the VCA and MCM at the University of Melbourne, Research Ethics in the Creative Arts examined the impact of ethical regulation on the creative practice research at the Victorian College of the Arts at the University of Melbourne. This project revealed two key issues: Firstly, that currently supervisors tended to guide their students to frame the project to avoid ethically risky or fraught projects (or the process of applying for ethics). Secondly that graduate researchers tended to self-censor and shy away from ethically difficult issues if they or the supervisor thought their project might have trouble getting through ethics.

The survey revealed a significant difference in the experience of researchers who were working with traditional quantitative

or qualitative methodologies and researchers working in the emerging field of practice led research. Whilst traditional researchers had few issues with the ethics process (beyond those common to most researcher), practice-led researchers expressed a great deal of dissatisfaction with the ethical regulation of practice-as research. These included the following responses:

The ethics process introduces limitations that work against 'cutting edge' creative practice research;

Complexity and the distinctive emergent nature of creative practice research suffers at the hands of the 'bureaucratic burden' of compliance;

There is an impost on artistic freedom (the aesthetic alibi);

The ethics process works against spontaneity, serendipity and the situatedness of creative practice research;

Students often self-censor and don't do the research they really want to do because they don't want to go through the ethics process or their supervisors encourage them to avoid the ethics process);

Creative practice researchers don't have to undergo ethics assessment for projects outside of the academy and so it is perceived to be better to 'do' more ethically challenging projects outside of the frame of the institution. (Bolt et al, 2010)

With its emergent and performative methodologies, creative practice research has quite different approaches, methodologies and outcomes from established qualitative and quantitative research methodologies that constitute the 'norm' in research in the University. From the responses in the survey, particularly from amongst creative practice researchers, it emerged that researchers believe that the ethics protocols, processes and procedures in universities operate as a silent regulator of conduct and a subtle determination of content in creative arts research. From these observations it could be argued that through its very stringent processes of ethical regulation, the university ethics procedure introduces limitations that work against 'cutting edge' research and mitigates experimentation at the heart of creative arts practice.

This ambivalence towards ethics regulation has led to an attitude amongst creative practice supervisors and graduate researchers that 'ethics' is something that the artist and designer only has to engage with while they are enrolled in a higher research degree at a university. Further it confirmed that the ethos of risk taking and rule breaking that governs artistic practice in the 'real' world, and which permeates discourse around avant-garde and contemporary art and design practice, creates resistance to a process that requires careful attention and adherence to protocols that are concerned to minimize risk and discomfort; those principles that underpin university research ethics. Ethics is therefore seen by supervisors and graduate creative practice researchers alike as 'a bureaucratic hurdle to get over.' As one of the respondents observed: 'There is no real-world-working-as-studio-based-artist application.' This view of ethics is reinforced by a research culture that is concerned with compliance and risk aversion. Thus, the idea of the 'ethical researcher' is not one that sits comfortably with a creative tradition that aims to 'worry' boundaries. Currently 'ethics' is seen as one of those boundaries that art should cross.

A number of UK studies (Wiles et al. 2009, Wiles et al 2010) have identified and reviewed the critical issues facing researchers dealing with visual methodologies and visual data. To date this research has focused primarily on the researchers and graduate workers working with visual methodologies in the social sciences—visual sociology, visual geography, visual anthropology and ethnography to name a few fields—but these studies do not address the specific issues facing creative researchers, including the visual and performing arts and design. Similarly, a recent initiative funded by the Melbourne Social Equity Institute at the University of Melbourne produced the document Guidelines for Ethical Visual Research Methods (Cox et al, 2014) that recognized that the systems and regulations that guide ethical practice in researcher, 'very often they have little specific reference to visual practice or the creation and use of imagery' (Cox et al, 2014: 5). Whilst the guidelines are valuable to those social scientists working with visual methodologies, the authors recognized that there are 'critical gaps' in the guidelines and resources offered by this publication. The gap is in the lack of resources that are specific to the creative and performing arts and design.

Ethics and situated practices in action

The VCA and MCM 2009 pilot study raised a series of questions that have become central to the 2015-2017 nationwide study of creative practice research and ethics processes in the iDARE (innovation.design.art.research.ethics) project. iDARE is attending to the relationships between higher degree research candidates, academic researchers/ supervisors, and ethics administrators working in and with creative practice research (CPR) and how practitioners work in this space between the academy and the community at large. iDARE is focused on determining whether there is disjuncture between the institutions' and the artists' (candidates, academic researchers/ supervisors) understanding of ethics. The objectives of the Office of Teaching and Learning funded project are threefold. Firstly, work with the sector to identify existing initiatives and case studies in ethics education and devise best practice models for the ethical conduct of creative practice research. Secondly articulate the concept of 'ethical know-how' as a key conceptual and practical aspect of the research design. Thirdly, to establish specific skills and devise creative pedagogical methodologies that will equip creative practitioners with ethical-know and reposition 'ethics' as being at the forefront and centre of innovative creative research practice.

Building on the 2009 pilot study, the iDARE project is examining how creative artists and designers across Australian universities situate themselves as creative practice researchers in terms of the institutional ethics principles and how creative artists/ designers situate themselves in terms of ethics and ethical know-how once they leave the academy. To respond to these questions, the iDARE study is hosting a national online survey, a series of symposia and workshops and a conference, to develop resources for candidates, researchers and supervisors, and ethics administrators that build knowledges in the diversity of practices and process of the creative arts disciplines.

The research design has merged methods from qualitative educational research and creative practice research, for example online surveys and interviews sit alongside arts methods such as productive workshops involving research candidates,

researchers and supervisors and ethics administrators. It also aims to draw on the resources and innovative pedagogical approaches that are being developed by academics in creative practice across the country. These activities, involving script reading and performance, and discursive panels on participation, hypotheticals and future scenario building draw on material and examples specific to creative practice disciplines and use creative methodologies. From this diverse gathering of information, case studies, pedagogical models and heuristics, the project will build a toolkit of resources aimed to help prepare our graduate researchers to become ethical and innovative practitioners in the real world.

What is ethics?

In order to understand creative practitioners' attitude to ethics, we have asked candidates and academic researcher and supervisors in the online surveys to respond to the question: What is ethics and what does ethics mean to me? In their responses there is a range of responses that problematize the current situation in the academy. For one candidate, the response 'Permission' (Research candidate) situates this reading of ethics as the academy as gatekeeper, and authorizer of the 'ethical' research. For another candidate, their involvement with an extended research ethics training supports a recognition of the complex space of ethical deliberation as a researcher:

'Ethics includes the range of my behaviour and conduct towards people I work around in general and subjects in particular. It includes my thinking about the impact and implications of my practice socially and environmentally. It includes my considering who owns material generated by the project. It includes thinking about storage and protection of resource material (e.g. film) and about the display of material. For my project I undertook extended research ethics training as I intended to work across cultures and potentially with vulnerable communities.' (Research candidate)

The process of doing research is acknowledged by candidates recognising how a researcher *'influences the environment (even by their passive presence alone), as well as a responsibility for events resulting from that influence'* (Research candidate). The principles guiding the researcher are also acknowledged, *'A set of principles by which the artist governs their practice'* (Research candidate). For others there are issues of harm that have come to the fore:

A consideration of how the practice may affect others, so that it does not diminish the rights of, or cause hurt to, others. Others might include individuals, groups, animals or organizations (Research candidate).

Ensuring that my research minimizes the amount of potential harm and distress to subjects. Also ensuring that collaborators are sufficiently credited for their contribution to a project (Research candidate).

These comments from the respondents see ethics as a set of principles that guide how a researcher might act in practice. The responses reflect an adherence to principles that are contained in University's codes of conduct and are embodied by all researchers. How then do the creative arts differ?

Conceptual Framework

A mentioned above, Research Ethics in the Creative Arts (2009) revealed the disjuncture between what happens in the academy and what happens in the real world when students graduate. Whilst graduate researchers working in the university are required to observe the University's Code of Conduct for Research and adhere to the guidelines provided by the National Statement, artists working in the community are not similarly constrained. Once they leave the university, they will no longer be required to gain ethics clearance for their work but will be required to use their own developed sense of ethics to make 'judgment calls.' This need for graduating Creative Practice Researchers to develop their own 'sense' of ethics finds a form in the notion of ethical know-how that directs the conceptual framing of the iDARE project. The concept of ethical know-how is informed by key ethical theorists/scholars that work with the notions of deliberation, 'ethical know-how' and virtue (Varela, 1999) and the notion of enchanted sensibility (Bennett, 2001)

Situating creative practices with Varela's 'ethics'

Francisco Varela's book, *Ethical Know-How: Action, Wisdom, Cognition*, provides the conceptual framework and an understanding of what finding one's own sense of 'ethics' may entail. The very core of Varela's proposition involves two principles. Firstly, '(e)thical know-how is the progressive, firsthand acquaintance with the virtuality of the self' (Varela, 1999: 63) and secondly, that 'if we do not practice transformation, we will never attain the highest degree of ethical expertise' (Varela, 1999: 63).

Ethical Know-How is structured as three lectures: *Know-How and Know-What, On Ethical Expertise, and The Embodiment of Emptiness*. He draws on neurobiology, understandings of cognition and consciousness, and the 'wisdom traditions' of Confucianism and Buddhism, offering an exploration of the nature of ethical know-how and approaches toward cultivating it. Varela identifies a distinction between 'ethical know-how' (sometimes referred to as 'ethical expertise'), and ethical deliberation, or ethical 'know-what'. Many western writers on ethics, he claims, tend to focus on reasoning as the central issue for ethics. This becomes an issue of deliberation. Ethical know-how, on the other hand, does not centre itself on rational judgments or reasoning. Rather, it is situated, improvisational and spontaneous—being grounded in immediacy and the specific tissue of circumstances in the moment. Ethical know-how involves behaving with sensitivity to the particularities of the situation where there is not a reliance on a set of rules. He notes:

To gather a situation under a rule a person must describe the situation in terms of categories we may call cognitive. Instead, if we try and see correspondences and affinities, the situation at hand becomes much more textured. (Varela, 1999: 28)

Drawing on the 4th century Confucian, Meng-tzu or Mencius, Varela suggests that, 'intelligence should guide our actions, but in harmony with the texture of the situation at hand, not in accordance with a set of rules or procedures.' (Varela, 1999: 31) This would not seem to bode well for the deliberative rules and procedures of an institutionalized ethics approval process. However, as he goes on it becomes clear that deliberation and know-how operate as a critical, symbiotic ecology:

And because truly ethical behaviour takes the middle way between spontaneity and rational calculation, the truly ethical person can, like any other kind of expert, after acting spontaneously, reconstruct the intelligent awareness that justifies the action. And, like any other kind of expert, the truly ethical person can use such an apriori justification as a stepping-stone for continued learning. Indeed, even the beginner can use this sort of deliberate analysis to acquire sufficient intelligent awareness to bypass deliberateness altogether and become an expert' (Varela, 1999: 31-32).

It seems worth noting here that Varela's description of this process of acquiring ethical know-how is not dissimilar to the development of methodological understanding in creative practice research—where one brings existing practice-based expertise into a process of developing new expertise as creative practice researchers, which involves (to paraphrase and adapt Varela's words): after acting spontaneously in a creative practice context, to reconstruct the intelligent awareness that justifies (and better comprehends) the action. And then, use such an apriori justifications or articulations as a stepping-stone for continued learning about how one practices—or how one approaches practice and can articulate the methodology integral to that practicing. Thus, the beginner—such as a new PhD candidate bringing their practice expertise into a context through which to develop new research expertise—can use the kinds of deliberative analysis of an ethics approval process, and the early articulations of methodology, as integral to acquiring 'sufficient intelligent awareness to bypass deliberateness altogether and become an expert.' (Varela, 1999: 32). This raises a question that might be productively pursued: Given this understanding of a to-and-fro between the deliberation and know-how, are current ethics review processes shaped as well as they could be to render this kind of learning and acquisition of awareness very likely? Furthermore, how might one reconfigure an ethics approval application process to work as well as possible with the development of this deeper ethical expertise or know-how?

Bennett's enchanted sensibility

In her monograph *The Enchantment of Modern Life: attachments, crossings and ethics*, Jane Bennett presents ideas of 'sensibility in a similar role to that of Varela's 'know-how'. She makes a case 'for a model of ethics as a complex interplay of code and sensibility. Sensibility provides an impetus to enact the code and also sometimes reveals the need to revise it' (Bennett, 2001: 156). Bennett's model is based on enchantment, or the cultivation of an enchanted sensibility where '(e)nchantment is a feeling of being connected in an affirmative way to existence; it is to be under the momentary impression that the natural and cultural worlds offer gifts and, in doing so, remind us that it is good to be alive.' (Bennett, 2001: 156) However, she goes to warn that:

Any sensibility is an orchestrated arrangement of affections, but affective energies are unruly and protean forces and tend to wander from their musical score. Thus, the link between them and an ethical sensibility is tenuous and unstable and requires repeated acts of discipline and returning. I do not think that there is any way around this fragility or the effort it takes to respond to it. (Bennett, 2001: 157)

Varela also acknowledges this on-going process. As part of the 'very stuff of our lives', he writes:

Our lived world is so ready-at-hand that we have no deliberateness about what it is and how we inhabit it. When we sit at the table to eat with a relative or friend, the entire complex know-how to handle the utensils, how to sit, how to converse, is present without deliberation. We could say that our having-lunch-self is transparent. You finish lunch, return to the office, and enter into a readiness that has its own mode of speaking, moving and making assessments. (Varela, 1999: 9)

Varela sees us as moving from one readiness-for-action to another, each one constituting what he calls a 'micro-identity' and a 'micro-world'. Our shifting from one micro-world and identity to another is mostly barely perceptible to us. However, as part of that 'stuff of life' things breakdown. We lose our wallet, our lunch partner says something unexpected or devastating that throws us off balance, we accidentally poke out a contact lens and become visually impaired, a car smashes into the restaurant ... or whatever. In these situations, the smooth transition from one to another breaks down—and the transition, in having to be assembled out of all the resources we can muster, becomes more evident. This uncertainty is what ethics is about. For Varela, 'the ability to take appropriate action is, in some important sense, how we embody a stream of recurrent micro world transitions' (Varela, 1999: 10). Rather than being experts of our micro world, we become like beginners again, grappling with uncertainty in finding a way to assemble the best way forward (Varela, 1999: 18).

Ethical know-how by degrees

What does this mean for the development of an ethical expertise that will underpin and sustain our professional creative research practice? Varela suggests that while 'the situations in which we exercise ethical expertise [or know-how] far outnumber those in which we must exercise explicit ethical deliberation' (Varela, 1999: 23), we need to strive toward an awareness of that know-how or expertise, how it is constituted. He insists that:

truly ethical behavior does not arise from mere habit or from obedience to patterns or rules. Truly expert people act from extended inclinations...and thus transcend the limitations inherent in a repertoire of purely habitual responses. (Varela, 1999: 30-31)

Thus, ethical know-how comes in degrees —with degrees, that is, of wisdom. The space in which ethical know-how operates in degrees, may seem invisible to the untrained eye and hard to fathom according to any identifiable logic. Varela calls this illogical virtue 'crazy wisdom' and that is often misunderstood. He juxtaposed two extremes concerned how virtue can be misunderstood:

Those who consider 'crazy wisdom' is virtuous but insist that it remain entirely spontaneous and unfettered by reason, or deliberation;

Those who dismiss crazy wisdom and insist on reliance upon rational calculations about goals and means.

As a consequence, one could say that the unthinking, entirely spontaneous creative and the bureaucrat might occupy the seat

of false virtue. Varela's argues that his lectures are 'more than anything a plea for the re-enchantment of wisdom, understood as non-intentional action. This skilful approach to living is based on a pragmatics of transformation that demands nothing less than a moment to moment awareness of the virtual nature of our selves. In its full unfolding it opens up openness as authentic caring' (Varela, 1999: 75).

Undertaking a research degree is commonly seen as transformative: that we push ourselves and our practices through a process of self-transformation in order to generate collective value. Perhaps then, the opportunity of creative practice research is to find that middle way between spontaneity and rational calculation. Could it be that with some careful effort and particular training, that this might also be part of that progressive, firsthand acquaintance with the 'virtuality of the self' that ethical know-how provides.

Ethical deliberation and ethical know-how in practice: A case study

This deliberation raises a final question for this paper: How might we develop the conditions of possibility of ethical know-how within the 'training' of our creative practice researchers? In their study, 'Human Research Ethics in Practice: Deliberative Strategies, Processes and Perceptions' (2009), researchers Lynn Gillam, Marilys Guillemin, Annie Bolitho and Doreen Rosenthal, investigated how researchers and ethics committee members address the 'ethical appropriateness' of research methodologies. They identified 'imaginative identification' as a strategy for guiding ethical judgment on such questions (Gillam et al, 2009: 07.7). It involves putting yourself in the shoes of another person; of being able to empathise or imagine what it would be like if you were the one who was subject to a particular situation or practice. How would you feel if this was done to you? (Gillam et al, 2009, p. 07.7) A case study, using the notion of 'imaginative identification' becomes one strategy to 'test' the possibilities of using this concept as a strategy for developing ethical know-how amongst creative practice researcher.

In this case study, a workshop scenario, a 'hypothetical' pedagogical model was developed using actual artistic projects transplanted into a research context. The participants in the workshop were divided into groups and asked to put themselves in position of being an ethics committee. Each group was asked to address a 'hypothetical' case study that draws on an art project in the real world. Their role was to deliberate on the case study presented to them and report back to the workshop addressing the following questions:

What issues does this case studies raise for an ethics committee?

What would you advise the researcher?

Under what circumstances would this project be given approval?

How do ethics committees reconcile the notion of 'beneficence' as defined by the National Statement and the avant-garde claim that 'provocation', 'bother' 'worry' and 'discomfort' are central to art's beneficence?

The groups (aka ethics committees) were given a project summary of the 'research' such as would be found in a Plain Language Statement, the principles for ethical research as set out in the National Statement (2007)—integrity of researcher; respect for human and animals; regard for welfare and rights; justice; consent - informed voluntary; and beneficence i.e. Maximize benefits, minimise risks to participants; and a series of conceptual 'flags' to help them identify any issues in the research. These flags were drawn from Gillam et al's work 'Human Research Ethics in Practice: Deliberative Strategies, Processes and Perceptions' (2009):

Are there aspects to the research that seem ethically worrying?

Principles - Do you see any threats to autonomy, privacy or any risks of harm?

Imaginative Identification - What would it be like to be a participant in this project?

Does the research have an appropriate ethical orientation towards participants (sees them as people and not guinea pigs)?

For the purpose of this essay, we will present one case study hypothetical, one based on the performance artist, Marina Abramovic. Abramovic's famous 1975 performance Lips of Thomas was 'transformed' into a research project being presented to our hypothetical Human Ethics Advisory Committee for consideration and recommendation. Below is the information provided to the group:

Plain Language Statement

Applicant: Marina Abramovic

Proposed Title of Research Project: *Lips of Thomas*

Executive Summary in Plain English

Research Question

What are the definable limits of an endurance performance work if the rules are not identifiable?

Project Summary

I slowly eat 1 kilo of honey with a silver spoon.

I slowly drink 1 litre of red wine out of a crystal glass.

I break the glass with my right hand.

I cut a five pointed star on my stomach with a razor blade.

I violently whip myself until I no longer feel any pain.

I lay down on a cross made of ice blocks.

The heat of a suspended space heater pointed at my stomach

Causes the cut star to bleed.

The rest of my body begins to freeze

What will the participants be asked to do?

The audience will take action or not.

Importance/Relevance of the project

The fact that Lips of Thomas was an art event and not the everyday is critical to the tension between aesthetics and ethics and to the question of whether an audience/participant should act or not.

In the discussion that followed on from the deliberation, a range of issues were covered such as: when does an audience of a performance become a participant? What duty of care was owed to the artists? to the audience? how could voluntary informed consent be gained? How would the artist mitigate the possible physical and psychological risks? what issues were concerned with Occupational Health and Safety and what were ethical concerns and finally how would one weigh up issues of beneficence in this performance? In other words, all of the principles of ethical research came into play in this discussion of *Lips of Thomas*.

This approach could be effectively used with any discipline, but what 'works' for the creative practice disciplines is the fact that the hypothetical case studies are drawn from real world (and often well known) creative art practices. Any research project or art project involving human subjects could be put forward in such a way. What emerged was that with a few key conceptual tools (the principles and the 'flags') our participants were able to enter into a process of developing one's ethical know-how. This occurred through prompting apriori justifications or articulations as a stepping-stone for continued learning by asking them to consider the situation from the viewpoint of 'What would it be like to be a participant in this project?'; 'What would it be like to be a participant in an ethics committee considering this project? Future workshops will aim to expand this further, by engaging researchers in a collective exploration of the ethical dimensions of their own practice approaches. This longer-term engagement will involve moving through iterative cycles of creative action followed by apriori justification in order to explore and test ways of constructing meaningful stepping-stones for the continual, on-going development of ethical know-how.

Conclusion

In this paper we have focused on a current learning and teaching project that attends to ethical know-how in creative practice research in order to address the gaps between institutional research know-how and the practices of creative practitioners in the world. We noted that in the new educational environment that creative practice researchers find themselves working in, that is the research university, creative practice researchers are now required to observe the University's Code of Conduct for Research and adhere to the guidelines provided by the National Statement. This contrasts with the situation for practicing artists working in the community who use their own developed sense of ethics to make 'judgment calls.' In order to address the disjuncture between institutional ethics and compliance and real world practice, we have adopted the conceptual frame of ethical know-how to propose a model that will provide the foundations required in the real world by artists. Through a case study that adapts real world art practice to the research context of the Academy, this essay demonstrates how institutional know-what could be brought into play with our on-going processes of developing ethical know-how. We have tested how 'the hypothetical' enables us to shift perceptions and practice around ethics. This approach raises issues specific to the creative arts disciplines but adaptable to other disciplines. Our aim is to generate stepping-stones that can meaningfully and effectively prepare our graduate researchers to become ethical and innovative practitioners in the real world.

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Supporting English as an additional language (EAL) doctoral students through an academic writing intervention programme

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Abstract

English as a second language (EAL) doctoral students encounter numerous challenges with writing a thesis in English. This study reports on an innovative university based writing intervention programme to support EAL doctoral students with overcoming these challenges. The programme involved explicit grammar instruction, structured input and output, and teacher-led indirect and direct corrective feedback accompanied by metalinguistic explanation. Peers undertook supervised practice in giving corrective feedback and metalinguistic explanation to each other, and were encouraged to continue this beyond the classroom. There were seven intervention participants and eight control participants, all undertaking EAL doctorates in two schools from the same faculty. Quantitative data comprised of pre- and post-test writing samples from all participants. Focus group interviews were also conducted before and after the writing intervention programme. Analysis of student essays revealed that the intervention group reduced errors significantly more than the control group. Indeed, the number of errors was substantially reduced for 6 of the 7 doctoral students in the intervention group. Reasons why those participating in the same intervention programme achieved different individual results were explored in the focus group interviews. The qualitative findings suggest that individual differences among participants are related to prior English language instruction, learning and experiences. Overall, the findings suggest that further investigation of the intervention programme is warranted. More generally, the results of this study suggest that individual contextual factors should be considered in the planning and implementation of university based academic writing programmes for doctoral students.

Keywords

English (Second Language), English for academic purposes, academic writing

Introduction

Mastery of academic writing is a hallmark of success in doctoral studies. All doctoral students require effective feedback during the thesis writing process (Kumar & Stracke, 2007) but this can be additionally difficult for those supervising English as a second language (EAL) postgraduate students (Bitchener & Basturkmen, 2006). EAL postgraduate students encounter numerous challenges writing a thesis in English, not just when understanding and meeting the genre requirements (Bitchener & Basturkmen, 2006), but also difficulties with clearly and concisely expressing themselves in grammatically correct English (Phakiti & Li, 2011, pp. 240-244). Increasing knowledge about advanced grammatical structures is a key element in improving the academic writing ability of EAL postgraduate students preparing a thesis (Gunawardena, 2014, pp. A-114 - 115).

This paper explores one initiative to support EAL doctoral students with the writing of their thesis. The programme involved a sequenced combination of explicit grammar instruction, structured input and output, and teacher-led indirect and direct corrective feedback accompanied by metalinguistic explanation. Thereafter, peers were asked to undertake supervised practice in giving corrective feedback and metalinguistic explanation to each other, and encouraged to continue practicing this outside of the classroom.

There is an earlier companion investigation to this research which discusses the overall statistical impact of the intervention programme on students' error rates and error categories (Muller & Gregoric, in press), and it found greater improvements in the written accuracy and self-editing skills for the intervention group as compared to the control (non-intervention) group. This study complements that work by providing a more detailed analysis of individual differences within the intervention group's results. We are interested in differences in the uptake of instruction and feedback because an increased understanding of these variables can inform future doctoral writing programmes which integrate a peer review element.

Research on individual differences on writing acquisition and uptake of feedback

Writing is a means of internalising language content, thereby encouraging language development (Williams, 2012). Indeed, 'the evidence that writing can facilitate [EAL] knowledge creation is growing' (Williams, 2012, p. 324) perhaps because of a focus on form and permanence of feedback opportunities (Williams, 2012, pp. 325-327). According to the Output Hypothesis (Swain, 1993, 1995, 1998), language production plays a role in increasing fluency, because fluency is gained through an increased self-awareness of linguistic problems, opportunities to test and modify understandings, and facilitating reflection on language usage. Writing may provide greater opportunities for this (Swain, 1998).

Individual differences can influence all aspects of second language acquisition (Dörnyei, 2005) including writing. More generally, core variables affecting individual second language acquisition include personality, language aptitude, motivation, learning/cognitive style, and learning strategies used (Dörnyei, 2005). Individual differences play an important role in L2 performance and processes at all stages of the writing process

(Kormos, 2012, pp. 391-392). In a review of the literature, Kormos (2012, p. 400) argues that variations in cognitive aptitude, working memory, and motivation contribute to student's learning through writing. As Kormos (2012) explains, aptitude for learning can affect how students notice and address gaps in their knowledge. Different working memory capacity also affects how students learn from feedback on their writing. Motivation to write is influenced by individual goals and attitudes, along with the broader social, cultural, and educational context. These individual profiles may account for how students exploit the learning potential within writing opportunities. DeKeyser (2012, pp. 190-191) suggests that individual differences in learning ability may be attributable to the interactions between aptitude, age, treatment, and structure variables. In so doing, DeKeyser (2012) goes beyond the individual attributes suggested by Kormos (2012) to consider age effects, the instructional programme (context), and the elements being learnt.

The potential of learning English through writing is not realised equally by students. To better understand the role of individual differences in the uptake of written corrective feedback, Shintani and Ellis (2015) investigated the relationship between language analytical ability and written grammatical feedback, particularly as it relates to article usage. They report that language analytical ability affects learners' ability to deductively and inductively utilise feedback. This led Shintani and Ellis (2015, p. 118) to surmise that the influence of language analytical ability is influenced by the depth of processing required and the nature of interactions between the type of feedback, revisions sought, and the grammatical target.

Feedback is most effective when it is processed and acted upon (Bitchener, 2012, p. 359). Despite this, individual engagement with feedback fluctuates. In a study of English as a second language students' responses to feedback, Storch and Wigglesworth (2010, pp. 327-328) suggest that the type of error made, along with individual factors, are important. For example, they noted more engagement with feedback and less resistance among learners who were striving to improve accuracy. From a sociocultural perspective, the orientation of learners (as shaped by beliefs and previous language instruction) influences acceptance of feedback, strategies used, and likelihood of retention (Lantolf & Thorne 2006). Indeed, Evans, Hartshorn, McCollum, and Wolfersberger (2010, pp. 448-449) suggest that contextual variables related to the learner, situation, or instructional methodology may be behind the conflicting results found in written corrective feedback studies. While not disagreeing with this, differences in research design and methodology may also be contributing factors (Gu enette, 2007).

Research findings on the effectiveness of error correction given by peers

Feedback given to EAL writers need not only be provided by teachers, since peers can also contribute to this task. Working with peers encourages self-learning and personal ownership, and empowers postgraduate students (Mullen, Fish, & Hutinger, 2010, p. 193). Furthermore, working in pairs to process feedback provides students with collaborative opportunities for understanding any linguistic points raised (Wigglesworth & Storch, 2012). Peer review, or peer feedback, is not a new

concept in error correction (Lundstrom & Baker, 2009, pp. 30-31). Peer review encourages independence in self-editing by removing student dependence on teacher feedback. Indeed, with the busy schedules of many academic staff limiting their ability to provide timely feedback, utilising peer feedback can be an effective strategy for enhancing post-graduate students' learning (Meerah & Halim, 2011, pp. 637-638). With some training/instruction, peer review can be successfully used by students to correct rule-based errors (Mawlawi Diab, 2010, pp. 91-92).

Peer review is a productive process for both writers and reviewers. However, those giving feedback appear to benefit from more significant gains (Lundstrom & Baker, 2009, p. 38; Rouhi & Azizian, 2013, p. 1353). For any error correction strategy to be effective, students must first notice the error (Bitchener & Ferris, 2012). Peer review achieves this by drawing attention to the errors in another's writing. Pointing to the errors of others may, over time, help improve the EAL writers' gaze when they subsequently review their own work (Lundstrom & Baker, 2009, p. 38). Essentially, reviewing another person's work can help the person giving the feedback improve their own writing skills because the act of critiquing raises the reviewer's awareness of the effective features of written language, focuses the reviewer's attention on how different aspects of the writing are received, and can require the reviewer to articulate any problems identified.

There are challenges to using peer review in the English language classroom. Students may not be able to identify errors, students may not trust each other, and they may be uncomfortable about providing criticism (Allaei & Connor, 1990; Carson & Nelson, 1996). Furthermore, many students prefer teacher feedback rather than peer feedback (Zhang, 1995), and not all EAL university students benefit from working in pairs (Shehadeh, 2011). Thus, peer review may not always be a useful strategy.

Despite the growing body of research on academic writing interventions incorporating corrective feedback and peer review, more research is needed to understand the individual factors influencing EAL doctoral students writing and responses to feedback. A concern of researchers, such as Storch (2010), Kormos (2012, p. 400) and Bitchener (2012, p. 358) is the lack of written corrective feedback research that considers the impact of individual factors on results. EAL doctoral students (and EAL students studying at lower levels) have differing responses to focussed teacher instruction, peer review, and written corrective feedback. This may be explained by differing individual variables. Therefore, in seeking to comprehensively understand the effectiveness of our intervention programme, the impact of individual differences should be considered in conjunction with improvement of errors made. The study considers the following questions:

1. What range of individual differences was found among participants?
2. Did students' experience of academic writing change after participation in the intervention programme?
3. Did students' practices around the editing/proofreading of their work change after participation in the intervention programme?

4. What is the students' perceived value of the intervention programme?

Methods

There were seven intervention participants and eight control participants, all undertaking EAL doctorates in two schools from the same faculty. Informed consent was obtained from all participants and the study received approval from the Social and Behavioural Research Ethics Committee, Flinders University.

A writing intervention programme was held weekly and involved an hour of formal explicit grammar instruction, practice exercises using structured input and output tasks, teacher-led indirect and direct corrective feedback with metalinguistic explanation. This was followed by a further hour of peer review sessions which focused on students examining each other's thesis writing. In these sessions, they engaged in supervised practice in giving corrective feedback (indirect and direct) on the focal area of error for that week and providing metalinguistic explanation to each other. The overarching aim was to improve both peer- and self-editing strategies, so they were encouraged to practice these skills outside of classroom. Overall, the programme ran for 16 hours over eight weeks.

The quantitative data comprised the errors found in pre- and post-test writing samples where students produced and self-corrected an essay in a 40-minute period. Qualitative data was gathered from focus group interviews which lasted approximately one hour and were used to explore students' experiences and writing practices before and after a writing intervention programme. Prior to the programme, focus group participants were asked about their academic writing, what they found challenging, what they would like to improve, editing practices, and the type of feedback they received from their academic supervisor about their writing. A second focus group

interview was conducted with the participants at the end of the writing intervention. Participants were asked questions about changes in their academic writing, experiences of the writing intervention programme including feedback received and peer support sessions, and any changes in the feedback received from their academic supervisor. During, and immediately afterward the focus group sessions, extensive notes were taken by the facilitating researcher. The researchers own thoughts after each focus group discussion were also recorded. The qualitative data were inductively coded using NVIVO software and the constant comparative method was used to analyse data for major themes.

Results and discussion

Question 1: What range of individual differences was found among participants?

There was a clear overall effect on number of errors made (Muller & Gregoric, in press). Comparison of pre- and post-intervention writing samples revealed that the number of errors was substantially reduced for 6 of the 7 postgraduate students, with variable individual effects found (see Table 1). The best improvement for the intervention group was a 73% decrease in errors (202 down to 96 errors per 1,000 words) and the average reduction in errors was between 40% to 73%. One intervention participant showed a 12% increase in errors (143 to 160 errors per 1,000 words). In the case of the intervention participant who did not improve, they were identified very quickly in the programme as having too great a gap in linguistic ability. That participant's writing extended beyond the scope of the error-counting technique used for analysis (i.e. incomprehensible sentences cannot be coded adequately for its erroneous elements) and the intervention was pitched at a level of English proficiency that was too high, and thus inaccessible, for this individual. Nevertheless, they chose to continue to participate.

TABLE 1: INDIVIDUAL DIFFERENCES IN ERROR RATES FOR THE INTERVENTION GROUP

| Participant | Errors per 1000 - PRE | Errors per 1000 - POST | Error rate change |
|---------------|-----------------------|------------------------|-------------------|
| Participant 1 | 202 | 96 | - 52 % |
| Participant 2 | 81 | 22 | - 73 % |
| Participant 3 | 88 | 53 | - 40 % |
| Participant 4 | 143 | 160 | + 12 % |
| Participant 5 | 146 | 50 | - 66 % |
| Participant 6 | 82 | 42 | - 48 % |
| Participant 7 | 58 | 29 | - 50 % |
| Averages | 114 | 65 | - 44 % |

TABLE 2: INDIVIDUAL DIFFERENCES IN ERROR RATES FOR THE CONTROL GROUP

| Participant | Errors per 1000 - PRE | Errors per 1000 - POST | Error rate change |
|-------------|-----------------------|------------------------|-------------------|
| Control 1 | 86 | 66 | - 23 % |
| Control 2 | 51 | 19 | - 63 % |
| Control 3 | 106 | 125 | + 18 % |
| Control 4 | 97 | 63 | - 35 % |
| Control 5 | 60 | 90 | + 51 % |
| Control 6 | 33 | 33 | - 2 % |
| Control 7 | 75 | 64 | - 15 % |
| Control 8 | 81 | 57 | - 30 % |
| Averages | 74 | 65 | - 12 % |

Table 2 shows that the control group had a much lesser improvement for the average number of errors (12% fewer errors) and an increased variability between individuals. The best improvement in the control group was a 63% decrease in errors (51 down to 19 errors per 1,000 words) and the average reduction in errors was between 2% to 63%. Two control participants increased in error rate, with one producing a 51% increase (60 to 90 errors per 1,000 words). The individuals in the control group, in fact, demonstrated a wider and unpredictable variability and range in their error rates changes than the intervention group who showed a more consistent pattern of change. While the control group started with a much lower average of errors, there was not a consistent trend of improvement over time among individuals, and this initial advantage was nullified by the end of the study by the intervention group's improvements.

The results we found for the intervention group are consistent with prior EAL writing studies that used a dynamic systems theory perspective, such as Yang and Sun (2015). These studies propose that non-linear patterns of EAL learning are to be expected given the complexity of language acquisition. We can now use the intervention students' own accounts from the focus groups to further explore reasons for individual differences in their success. From earlier studies it is known that variations in student's cognitive ability, such as working memory, contribute to language learning aptitude (Kormos, 2012, pp. 393-394). As doctoral students, all participants had completed at a minimum a previous university degree to a reasonably high standard. This academic aptitude generally suggests a pre-existing high cognitive capacity. However, despite students' high level of learning ability, they did not respond in the same way to writing activities.

Question 2: Did students' experiences of academic writing change after participation in the intervention programme?

Before participating in the programme, all students reported some degree of difficulty with academic writing. Academic writing was not easy even when students had extensive written English experience in their own country. Views ranged from one student who found nothing easy about academic writing, to several students who reported difficulties with particular aspects of academic writing, through to one student who reported on occasions being so immersed in writing that it was relatively easy. Generally, descriptive academic writing was considered easier than critical writing. Also, as one student acknowledged, academic writing is different from general writing, and they listed the importance of argument, coherence, and clarity as key elements. Another student elaborated on this, stating that having to think about logic, flow, and word choice can leave them feeling 'blocked'. In contrast, another student reported that academic writing helps them to think clearly.

Students reported using a variety of strategies to improve their academic writing ability. These included analysing journal articles for their structure and mimicking this, sometimes even keeping lists of useful words for future writing. Students used this strategy to avoid repetitive vocabulary. In fact, limited vocabulary and uncertainty about word choice reduced self-confidence in academic writing ability. Students found it complicated to use words academically, and there was some

confusion regarding formal/informal words. Finding alternative words to avoid repetition was also an issue. Knowing and using appropriate academic phrases was also identified as problematic. One student considered paraphrasing to be the hardest aspect of academic writing for them, and this is partly because of limited vocabulary.

Before the programme, students commonly reported difficulties with academic writing at the word, phrase, and sentence levels. Often, academic writing utilises complex long sentences and students tried to mimic this (even though they found the grammatical demands were high), but often their supervisors thought their sentences were too long and had too many errors. The students themselves also felt they were making mistakes because of their long sentences. Indeed, the most influential external factor identified that affected student's perceptions of their academic writing was from their academic supervision: students felt demotivated towards academic writing after receiving negative feedback on their writing and grammar from their academic supervisor. While grammar was discussed in a broad sense by students, issues specifically mentioned as major difficulties were subject-verb agreement, articles, and verb tense. Internal factors identified by the students as affecting their academic writing included the problems of mentally translating from L1 to L2 when writing, frustration associated with not wanting to write (the reasons for this were unstated), and knowing that something is wrong but not knowing what to do about it.

In summary, prior to the intervention, students were aware of their own personal difficulties with academic writing but, although they noticed these, they lacked sufficient knowledge/strategies to sufficiently improve their own work to the satisfaction of their academic supervisor (and themselves).

After the programme, there was widespread agreement that academic writing became somewhat easier. As one student commented, 'I understood what was taught and I am trying to improve my language skills'. Other students appear not to have improved to the same extent, reporting gaps in their knowledge due to missed lessons and lack of time to revise material outside of the programme. Students commented that since undertaking the programme they were paying more attention to the grammar in their writing and spending more time rewriting their work. Through the programme, students were more informed about what their weak points were and strategies for addressing these. For example, one student explained that they were better able to identify and match a sentence subject and object, which made the sentence structure clearer. However, students were still not always able to resolve writing issues successfully. Some students were still having problems with articles and verb tense, although one student noted that they were more confident in the use of articles.

On completion of the programme it appears that students were motivated to continue their own attempts at improving their academic writing. To this end, one student reported purchasing some academic writing books. Several students also expressed a desire to continue attending the programme, were this option available. They reported that the programme had not completely resolved all their academic writing issues. Students acknowledge that there was still room for improvement. As

students realised, there was still much more they could learn about academic writing in general than could be covered within a short intervention program. On the whole, students expressed the belief that the programme had helped them improve their academic writing to some extent. Personal motivation to continue addressing academic writing issues was evident.

Motivation plays a role in regulating EAL writers' attention to writing processes and feedback (Kormos, 2012, p. 399). In this study, motivation towards academic writing remained fairly high. In the beginning, all students were highly motivated to improve their academic writing and throughout the intervention participated in activities of personal interest and value to their thesis writing. Prior to the programme, students found academic writing in a second language challenging and even afterwards continue to do so; however, a strong determination to continue perfecting personal academic writing skills persisted. Interestingly, these results seem to suggest that while motivation had some role in how students exploited the learning potential of the programme, it does not sufficiently account for variations in progress.

The students' feedback indicates that varying levels of language aptitude could be a reason for the individual differences in the success of the programme. Components of language aptitude include phonetic coding, grammatical sensitivity, rote learning ability, and deductive learning ability (Carroll, 1981). With a strong focus on grammatical instruction, the programme extended these abilities. Kormos (2012, p. 396) argues a similar point of view:

The stages of writing where high aptitude learners might be advantaged are most likely to be the translation and reviewing phases ... Consequently, high aptitude learners might devote more attention to the syntactic complexity of their text and their writing might display higher levels of linguistic accuracy.

Evidence from this study suggests that this is indeed the case. Although not all were able to automatize grammatical knowledge, conscious awareness of and attention to errors did improve. In all, these results seem to support the hypothesis by Kormos (2012, p. 397) that:

Learners with high metalinguistic awareness and good deductive skills are better at noticing gaps in their grammatical knowledge while writing, and, as a result, might engage in more active and successful problem-solving behaviours when faced with these gaps.

Students in the programme developed their own repertoire of practices for addressing the linguistic difficulties that they encountered. They were encouraged to process feedback to progress their own language learning by internalising and consolidating knowledge. They did this with varying degrees of success. Following the intervention, students had a greater awareness of the strengths and difficulties of their prior practices. Students had also learnt new strategies and had practiced these in their own writing – thus they could see relevance to them. They were encouraged to use written corrective feedback outside of the classroom and there was some evidence of this occurring, as we will see in the next section.

Question 3: Did students' practices around editing/proofreading of their work change after participation in the intervention programme?

Before the intervention it was common for students not to worry about grammar when commencing writing. After freely writing, they would later go back and check for grammar and structure. Thus, often extensive editing and proofreading of the original text was required. With varying degrees of success, all participants had developed their own strategies for identifying and correcting linguistic errors. For one student, editing their work was a constant time-consuming task with chapters going back and forth between themselves and their academic supervisor (perhaps this was because this student was nearer to completion).

Prior to the study, students reported that they did their own editing and/or asked someone else. Two students relied solely on their own self-editing because they did not have others they could ask about the mechanics of their writing. One of these students did not have a friend in Australia to ask and another student reported that their friends were too busy. Four students mentioned that they asked someone else to help with the editing of their writing, most commonly they asked a friend (either native or non-native English speaker). Three students acknowledged that on occasions they used an editor, though this tended to be for a potentially publishable work such as a conference abstract or journal article rather than a thesis chapter draft. Students' own attempts at self-editing usually involved the re-reading of their paper once or twice.

Right from the start of the study it was evident that there was a mismatch between what some students wanted from their supervisor in terms of assistance with the actual thesis writing and what their supervisor was prepared to do. Although all students wanted their supervisor to concentrate on the content, it was commonly reported that supervisors focussed more on grammar than the students thought appropriate. Indeed, some supervisors picked up grammatical errors first and considered content later. Only one student specifically mentioned that their supervisor helped in the editing of their work. For another student, the co-supervisor assisted with editing. Often when supervisors provided less constructive feedback, there was also minimal guidance to students on how they could improve their writing style. Rather, as one student remarked, there was an expectation that a professional editor would be used for the thesis.

In summary, prior to participation in the intervention, participants recognised that their own attempts at correcting linguistic errors were limited and they required additional assistance. They were found to have varying levels of ability to both notice errors and correct these. Also, if using others to correct their work, the participants were dependent on the ability of another person to notice and correct errors.

After the programme, students reported that it was faster to edit when they did not worry about the content and concentrated on one type of error (a key educational point); however, they showed varied learning of this method. Competency levels were lower among those students who persisted with the practice of looking for too many types of error within one edit. Furthermore, several students reported still being unsure about sentence

structure, such as finding the subject and verb. One student reported sometimes forgetting how to correct an identified error, particularly those associated with plurals and articles (essentially the correct formation of the noun phrase). As another student remarked, 'I am still finding English expression hard'. However, even when students were unable to identify and label an error, it seems that their awareness had become heightened about structural discrepancies.

At the end of the intervention some students reported a continued use of this self-editing method, but others did not. Reasons for not continuing with the strategy were that it was time consuming, ongoing difficulty with identifying errors, and difficulty with changing previous (bad) habits. One student had merged the programme's editing strategy with previous practices, so although they were looking for one error type at a time, they edited sentence by sentence rather than scanning through the whole document for that error in one pass. Nevertheless, while the programme's self-editing strategy was not fully taken up by students on completion, there was an overall acknowledgement of improvement in academic writing ability.

These results fit with a social cognitive model of sequential skill acquisition as writing skills developed incrementally. This model posits that students learn new writing skills sequentially via observation, emulation, self-control, and self-regulation (see Zimmerman and Kitsantas 2002, pp. 660-1). The programme provided students with concise grammatical information which students could at first observe and then seek to replicate. Students reach the next level, self-control, by focussing on the process to achieve automaticity. At this point self-satisfaction is a primary motivator (Zimmerman and Kitsantas 2002, p. 660). Finally, as students learn to adapt the learning self-regulation is accomplished. Here, self-efficacy and intrinsic interest are dominant motivators (Zimmerman and Kitsantas 2002, pp. 660-1). Students in this programme were clearly at different stages of this journey.

Question 4: What is the students' perceived value of the intervention programme?

When an outcome is highly valued, and the programme is thought to be instrumental in achieving this, then motivation to learn is likely to increase. Prior to commencing the programme, students were highly motivated to improve their academic writing and there was an expectation that the programme would be useful. Willingness to voluntarily participate in the writing programme and consistent weekly attendance is evidence of this. Students had not expected any additional formal English writing instruction from the university, so the intervention in which they participated was a trial programme held for the first time and therefore thought of as a bonus.

Before commencing the programme students were asked about what aspects of their writing they would most like to improve. At this point students provided insight into their grammatical difficulties by mentioning their desire to improve use of articles, verbs, and prepositions. Students also wanted to improve sentence structure, increase knowledge about conditional phrases, and were seeking to build stronger arguments. Several participants expressed a desire to improve their writing skills so that they were not reliant on others to edit for them. A shared goal of students participating in the intervention was to improve

the accuracy of their writing so that they could receive more content-focussed feedback from their academic supervisor, and ultimately, because of the improved quality of their writing, require less thesis editing by a professional editor (which would save them money). As one student noted, their IELTS score had not improved much for over six years. This was attributed to continuously making the same mistakes and forming wrong habits. They hoped that the programme would help to develop better habits. Surprisingly, written corrective feedback was a new concept for most students. Only one had used written corrective feedback in their English school and had found it useful for correcting all types of problems. Another student was aware of written corrective feedback but had not personally used it.

When students had completed the intervention programme and had the opportunity to reflect on the experience, overall they were very positive. In particular, students highlighted the information and activities related to sentence construction, sentence combining, and paraphrasing as being very useful. Students reported greater knowledge about linguistic errors and how to correct them, though as they did acknowledge that they were still making some errors. However, often these errors were not necessarily related to a lack of knowledge about how to address them, but rather forgetting or lacking concentration. This is where students found the list of error types useful because it reminded them of what errors to check for and how to correct them. The handouts provided were also thought to be useful beyond the classroom. However, as these handouts tended to be somewhat complex, some students had difficulty fully understanding them. These students suggested a need to spend more time in class explaining the content of the handouts and dropping the level of explanation was a way to overcome this issue.

It was found that time-pressure limited students' ability to apply the knowledge learnt. Students said they lacked time to review the lesson content and had limited time in which to edit their work. Nevertheless, their improvement was sufficient for several supervisors to comment favourably on the reduction of errors. Fewer errors also meant that supervisors were able to read more for content. It should be noted that not all students had recently met with their supervisor and were unable to comment on this aspect.

Indirectly, the programme had helped to improve students' reading and critical thinking ability. When reading, students were more aware of the grammar used by other authors and how academic texts were structured. For example, one student commented they were more competent in identifying the subject of the sentence. Thus, when they did not understand a text, they searched for the subject and from this identifying the other parts of the sentence (e.g., verb, object) was somewhat easier. Another student reported that by being able to detect their mistakes, they became aware that there had been insufficient critical thinking in their thesis writing.

While teacher instruction was well-regarded, there was a mixed response to the peer-review component of the programme. It appears that sometimes this worked well and at other times not so well. At first, students had difficulty finding the errors in another student's paper. Adjusting a different writing style and

reading unfamiliar content took some time. Although not all students enjoyed peer reviewing, after around three classes some students reported feeling more comfortable with this aspect of the intervention. Some students were also concerned about the trustworthiness of the feedback received from peers and if the feedback they provided to another student was correct. Many preferred to receive feedback from a teacher than a peer because they were not confident about the advice received from a fellow student. Alternatively, students suggested that a teacher check the feedback that they were providing.

On the one hand, peer review provided some value for those participating. In reviewing another's work, students reported improving their own writing skills and receiving inspiration. This confirms previous findings that the giver of feedback can benefit more than the receiver (Lundstrom and Baker, 2009, p. 38; Rouhi and Azizian, 2013, p. 1353). They also valued the sharing of ideas and gaining a different perspective. They also benefited when a peer was able to find an error that they could not. For one student, this aspect of the programme helped them to improve their writing skills more than any other method that they had tried. However, others reported that even when they knew where an error was, they were not always able to suggest the correct form. Two students continued to peer review each other's work for a year beyond the programme. These students developed a trust in each other during the classes and mutually agreed to continue supporting each other after the programme's completion. Since both students were near the deadline to submit their thesis, this may have influenced this decision.

When asked about what they would include if the programme was run again, students suggested that more be taught about complex sentences. Students would also welcome more in class writing exercises. They recommended that a revised programme include vocabulary development, writing an argument and academic writing in general. However, if enacted, these suggestions would expand the scope of the programme beyond sentence construction and grammar. As discussed above, there were some student concerns about the peer editing component of the program. It was suggested that more teachers be involved in the programme to provide one-on-one feedback rather than a reliance on other students to do this. Nevertheless, students felt that eight weeks was long enough for the programme. Twelve weeks was the maximum time that they would attend for.

While the programme was helpful overall, the students desired further academic writing support and greater competency in self-editing. For some students this was because they had missed some classes and felt that they still had gaps in their knowledge. Other students understood what was taught but desired to improve their research writing skills even further. This is summed up by one student's request to 'Please continue this work'. The programme and its focus on linguistic accuracy was well received by students and contributed to improving their academic writing ability, with the exception of the one student who was not developmentally ready for the linguistic content presented (and who had also missed classes). Focus group discussions revealed that, after the intervention, several participants were somewhat more strategic in how they sought out and addressed linguistic errors.

After the programme, participants were more aware of the benefits and limitations of feedback provided by peers. This understanding could help them better choose their own peer reviewers in the future. This study confirms the relevance of peer review sessions for providing students with feedback on their writing. However, the results caution those offering an academic writing intervention for EAL postgraduate students to consider how any peer review component is provided and who is providing it. These doctoral students were seeking trustworthy feedback on a high stakes document (their thesis) and had a preference for teacher feedback over student feedback. There is some validity in students not trusting each other — the in-class work provided ample evidence that their peers do not recognise all errors and can actually introduce errors when making suggestions about how to make changes, and some even tried to make changes to already correct writing.

Conclusion

To conclude, these findings about the intervention programme are promising. They indicate that the programme is worthwhile for upper intermediate-advanced English learners and suggest possible improvements to further enhance the outcomes. Furthermore, the results provide additional insights into why EAL students participating in the same intervention programme achieve different results. The cohort studied had similar goals, attitudes, and motivations. Yet, the results presented here highlight suggest a continuum of learning trajectories influenced by individual context factors. At one end of the continuum, one student had far greater difficulty processing and applying the curriculum than others. Prior English language instruction and learning appears to be the main reason for this. At the other extreme were those students who made remarkable progress. They tended to have a more solid knowledge of English and the strategies in the programme were useful to help them notice and correct errors. The remaining students were situated somewhere in between, with partial uptake, where they were in a better position to notice errors but struggled to correct them. Further research on this possible continuum is required.

This study is not without limitations. While our study is limited by its focus on the small number of participants, we believe that their accounts offer meaningful insights for those planning writing interventions for EAL students at the postgraduate level. Furthermore, in offering anonymity to focus group participants we are unable to directly link the quantitative and qualitative data results for individual students.

The findings of the study suggest that further investigation of the intervention programme is warranted. More generally, the results of this study suggest that individual participant factors should be considered in the planning and implementation of academic writing programmes.

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Being RHD learners in a group supervision model: Collaborating to strengthen individual pursuits

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Abstract

Historically, the Research Higher Degree (RHD) experience is an individual pursuit, often in isolation. In general, RHD candidates progress with a supervisor whose expertise guides and shapes the research journey using a one-to-one model of engagement. However, alternative approaches to research supervision are possible, including a group supervision model. This paper presents a critique of a shared research journey from the perspective of both RHD students and their supervisor. Ten RHD students at different stages of their research, all supervised by the same person, have been meeting together on a regular basis since early 2015 to discuss and support each other's research. Their reflections on their experience of the group supervision model are analysed and four emergent themes are discussed from both perspectives. From students' perspectives, this collaborative model of supervision involves the creation of a community of practice which diffuses the power relationship and builds knowledge, whilst enhancing efficacy and achievement within the RHD program. From the supervisor's perspective, the group supervision model provides an effective use of all members' time and an experience that is both energising and productive. While the findings from this study are overwhelmingly positive and supportive of the group supervision model, questions relating to the adaptability and sustainability of this model are raised.

Keywords

RHD supervision; collaboration; students' experience; supervisor voice.

Introduction

The Research Higher Degree (RHD) journey is designed to challenge and extend individuals to produce new knowledge in various disciplines and fields. Traditionally, as part of this journey, the research and supervisory experiences of students can be isolating socially and academically (Fenge, 2012; Hutchings, 2015; McCallin & Nayar, 2012). In fact, the sense of isolation experienced by RHD students has been found to contribute to low completion rates and course withdrawals (Ali & Kohun, 2007; Hutchings, 2015).

The traditional one-to-one supervision model of doctoral students has had some success, but relies on student independence. Such supervisory experiences consist of hierarchical relationships based on language, power differences, and gaps in knowledge. The students are not seen as academics and therefore are 'overseen' by the supervisors in a master-apprentice type arrangement (Manathunga, 2012; Zeegers & Barron, 2012). Within this traditional supervision model, students have little influence on the process of learning with their doctoral research supervisor (Zeegers & Barron, 2012). Connell's (2012) experience of supervising

doctoral students caused a re-think of the current approach and practice, by reflecting on the positives, focusing on the meaningful conversations and allowing different models of doctoral supervision to emerge.

The team supervision model of one student to two supervisors, sometimes from different disciplines, has had varying degrees of success; it is largely dependent upon the student's rapport with the supervisors. Boud and Lee (2005) determined that other models of doctoral supervision such as the group supervision or peer learning model needed exploring. Peer learning occurs collectively in a communal group, where collaboration and trust are strong (Fenge, 2012; McCallin & Nayar, 2012); it is complementary to the supervisor-student relationship required in RHD education.

The group supervision model, where one academic supervises a group of students, has become more common in higher education, and links to Wenger's (1998) ideas about communities of practice and Burnett's (1999) collaborative cohort model. Fenge's (2012) findings on group supervision identified the importance of peer group learning, identity, cohesiveness, creativity and discussion. Hutchings (2015) found that group supervision was enhanced with functionality, enculturation and relationships development over time. However, there has been little research into how effective learning environments are developed and sustained in group supervision models in doctoral study.

Malfroy's (2005) findings on group research for PhD students identified a number of structural and content factors that enabled the development of rich learning and the growth of research capacity including: a room set up that encouraged collaborative discussion; timing that provided opportunity for students to attend after work; the provision of food and beverages along with opportunities for participants to present their research progress or to focus on difficult elements of research.

Background to the establishment of a group supervision model in one university

Malfroy's (2005) seminars closely mirror the group supervision research journey of ten RHD students, with the same research supervisor, being explored in this paper. Seven students are enrolled in a PhD, and three in a professional doctorate (EdD) within the school of education at one Australian university. The optional but regular two-hour group supervision sessions initiated by the supervisor have been well supported and received by the students, and have proved to be an energising and productive experience for both the supervisor and students.

The supervisor of the RHD group was motivated to initiate this model to successfully manage a challenging workload. The supervisor held leadership positions in her faculty and had an above average number of RHD students. She was concerned about the level of attention she would be able to provide to her ten RHD students, particularly her part-time students, in a traditional one-to-one supervision arrangement. A colleague had been using a monthly RHD group meeting model and reported on the positive outcomes for students and a sense of feeling more connected to the students and their challenges and progress. The supervisor made a decision to trial a group model of supervision despite her concerns this may add to her workload.

The supervisor believed that to generate an effective group, attention to building trusting relationships was fundamental and this would initially require weekly rather than monthly meetings. The meetings would need to occur in the late afternoon or early evening to ensure her part-time students could attend. The group consisted of three full-time international students and seven part-time students. Weekly meetings were not only designed to develop relationships and quickly learn about each other's research plans, but also to provide multiple opportunities for people to attend, given that not every student was able to attend every session. Several of the part-time students held leadership positions in state level organisations requiring travel and evening commitments that restricted weekly attendance. Following several months of weekly meetings, the group determined that fortnightly meetings would be more appropriate. However, the weekly meetings were an ideal way to commence as they provided ample opportunity for all involved to come to know each other well, even if they were unable to attend every session.

Initially the supervisor provided the structure for each session, which generally involved responding to readings, and a timetable for specific people to present aspects of their research or challenges they were facing. The readings provided had a strong focus on teachers' professional learning, a common research thread among this group of RHD students. The readings also provided an opportunity to consider how journal papers were structured and to identify what made a good abstract. The group often moved between content and process foci and technical and higher order challenges. Within the first two months, the supervisor no longer provided readings for two reasons: members of the group were heading in new directions with their research foci, and students were sharing their own readings. For example, two members became interested in narrative inquiry as a research methodology and shared with the group readings they had found supportive of their learning, even though other members were using different methodologies.

As members of the group were at different stages of their research journey, there were opportunities for all to learn about different requirements and challenges. Some members were developing proposals and seeking feedback, others were focused on ethics applications while others were collecting data or practising approaches to analysis. These differences proved of benefit, as they allowed students to learn from each other. Members provided excellent feedback to peers on their proposals and ethics applications, which supplemented the attention required by the supervisor. The sessions also allowed members to share their writing, trial their formal proposal presentations, ethics applications or conference papers and receive feedback. At times the feedback was quite critical and the supervisor was concerned about how members were feeling but, when asked, the people involved highly valued the input of their peers and recognised that it generated more effective outcomes for them. This was only possible because trusting and respectful relationships had developed and all members made a strong commitment to each other's learning. Members reported they were disappointed if they needed to miss a session, as they realised the value of attending and how it supported higher levels of engagement with their doctoral studies.

The supervisor was surprised by the success of the group. Not only were sessions lively, challenging and productive, but she was left with an uplifting sense of energy (even after a long day) and reflected that supporting learners to challenge themselves and be challenged by others was at the heart of her work as an academic. Students reported feeling energised by attending and valued celebrating others' successes and the support that was forthcoming in challenging times. The leadership role shifted from the supervisor shaping the format of sessions to group members driving the agenda. For example, the students requested a session on more sophisticated ways to use Endnote, so a guest speaker was invited. The group also shared the idea of developing a presentation for the Quality in Postgraduate Research (QPR) conference and from that presentation the idea of a joint publication evolved to formalise and document an evaluation of their experience. The collaborative approach to learning and supervision facilitated the group's willingness to work on a project together, interrogate their experiences and develop their research skills at the same time. The project was an unplanned but not unexpected initiative given the progress made by the group in twelve months. It was evident that the initial plans of the supervisor had grown well beyond trying to be more effective and efficient in her supervisory role.

Formalising the process of critical reflection on the group model of supervision

A qualitative case study was viewed by the RHD group members to be the most appropriate methodology for the aims of research. The primary aim was to determine each group member's responses to the processes, context, content and outcomes of being a member of the RHD group. The research participants included ten RHD students and their supervisor (see Figure 1 for student demographics). As all respondents' personal reflections provide the data for this study they will be referred to in this paper according to their group role rather than as research participants. However, a distinction is made between the supervisor's perspective and that of the students.

Personal reflections were formally gathered on two occasions, during October and November 2015, by email response and online survey respectively. Email reflections gathered in October responded to a request from the supervisor (personal communication, October 6, 2015) for perceptions of the RHD group (e.g. processes, context and content, support for learning) as she sought feedback on how the group was progressing. Feedback was shared with the group at the same time as the call for abstracts for the 2016 Quality in Postgraduate Research (QPR) conference in Adelaide. The group decided to take a more formal approach to gathering data and decided on an online (anonymous) survey. The survey was designed through email consultation with all group members and ultimately composed nine free text responses and one demographic question. Questions included; 'What do you like/not like about the group supervisor model?', 'In what ways has the group supervision model influenced you?' and 'Describe what you think the supervisor's role is and/or should be.' Participants were asked to suggest three words they felt best described their experiences of the group supervision model. Participation was voluntary on both occasions and all survey questions were optional.

Group characteristics

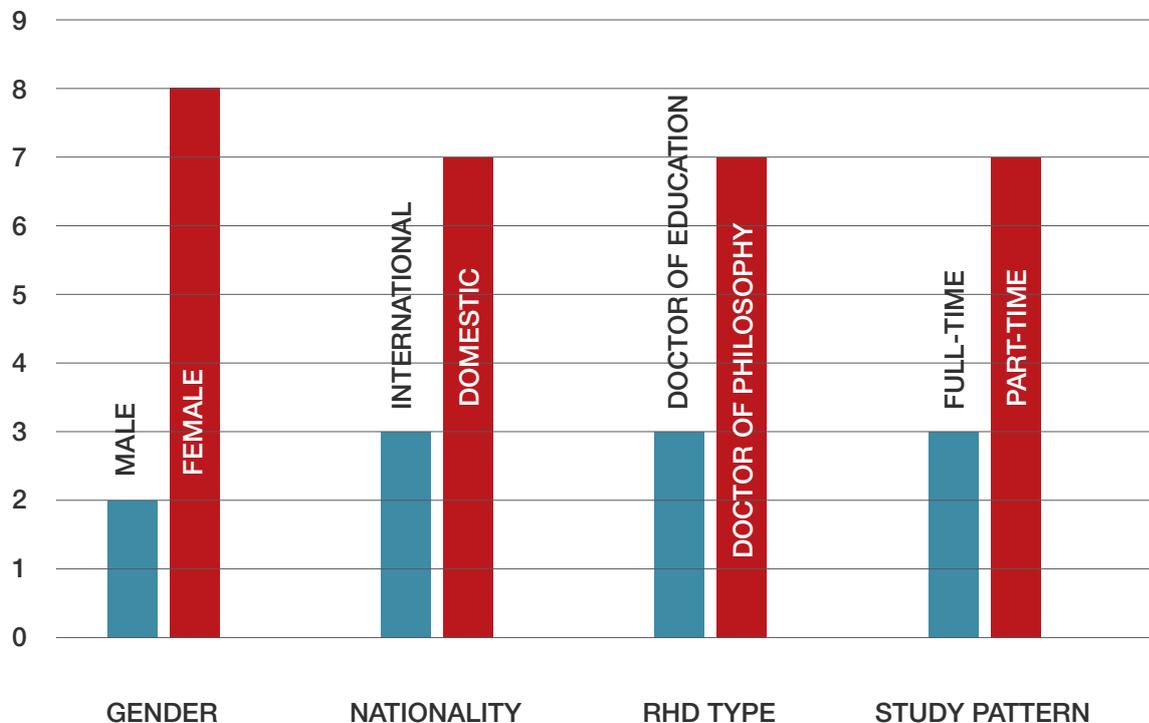


Figure 1: Demographics of RHD students participating in the group supervision model and research project

Survey responses were collated by question. Two questions were analysed for themes by six group members, under the guidance of the supervisor in a group setting. The remaining questions were allocated to individual group members for analysis and their reports circulated via email. The analysis of each question was then reviewed by three group members to identify common themes, under the guidance of the supervisor. Responses were coded according to these themes and participants' comments relevant to each theme were then extracted by one group member. These themes and associated quotes were reviewed by group members. In all, four broad themes were identified, which are presented in the findings section of this paper.

In keeping with a research focus about group supervision, the process of writing this paper has been undertaken as a group learning experience. The group used this project to develop skills in designing a survey, coding and analysing data. They critically reflected on their individual experiences of group supervision and shared the analysis of the data generated through the project.

Findings (structural, relational, intellectual growth, personal growth)

All group members expressed some concerns about the group supervision model prior to its establishment. The supervisor worried about the additional workload, whether group meetings would meet individuals' needs and what ethical dilemmas might arise. The students' concerns included the time investment, fears that focusing on others' work would be a distraction from their own studies and that the model would not give them the same degree of individual attention they valued. One of the intentions of developing an online survey after the group had been meeting for about a year, was to enable students to be honest in their reflections about the group supervision model. Whilst a question specifically asked 'What don't you like about group supervision' there were no criticisms of this model. The only thing students did not like was having to miss a group session due to other commitments! Overwhelmingly, their reflections on the group supervision model were positive. Any initial concerns were allayed by the unequivocally constructive experiences that ensued.

Four key themes emerged as an outcome of the data analysis. The themes address organisational elements, relational factors and intrinsic outcomes of the group supervision model. These were labelled as Structure and processes; Relationships; Intellectual growth and Personal growth. The four themes will be considered individually from the perspectives of both the students and the supervisor.

Structural insights

Structure and processes were fundamental to the group especially in the early stages of the group's formation. The supervisor had intentionally considered the provision of weekly readings and afternoon tea as ways to build group rapport and interactions. An area of her research expertise that was a shared interest for all ten RHD students was professional learning. Discussing readings related to this area enabled the students to initially critique research in a way that was academic and personally non-threatening. The following reflections from students noted the shift in structure and the role of the supervisor as the group came to know each other:

(The supervisor) was more directive at the start as we were becoming established, so she would provide readings for us to discuss and afternoon tea to sustain us (for the 2+ hours)! As the group became more confident, the focus shifted to discussing our own work...she provides direction when required but, over time, she has become a part of the group rather than the sole voice of supervision.

Other reflections, related to structure and processes, noted the size of the group, group protocols and frequency of meetings as important in the success of the group supervision model. The group felt that a minimum of five and a maximum of ten was the optimum size for effective outcomes. Five was a sufficient number to provide varied perspectives and share the feedback responsibilities, while ten was felt to be a maximum number given the value placed on everyone having a voice. Several students commented on the ideal frequency of meetings, with recognition of the value of commencing with weekly sessions but noting that monthly meetings were not frequent enough. One student noted that:

Initially the weekly meetings were hard to commit to, but extremely valuable to kick-start study and my learning, and to get my 'head in that study space'. Monthly meetings are not frequent enough, because if one is unable to make a session there is a long gap in connection time with the people in this group. Fortnightly seems to work well as there is enough time between sessions to work towards sharing or presenting something of relevance to the group.

While the group did not explicitly develop a set of group protocols, there was certainly a culture of shared airtime and respect. Some members of the group were more vocal than others and this was acknowledged in the following student response:

Sometimes I feel a little frustrated with the opinions of others, especially when commentary is given that seems trivial or lacking knowledge of the subject. I try not to do this but given that I talk quite a bit I suspect others may feel similarly about my opinions at times. Some folk are more active contributors than others, which can lead to dominant voices (I'd put myself in this category). But I guess that's just about how different people learn.

This comment tends to suggest an awareness of individual differences, but the unspoken 'protocols' of the group ensured the interaction between group members was at all times respectful and supportive. The reflection provides an insight into an outcome of participating in the group: consideration of self and others as learners (discussed in more detail shortly).

A fundamental outcome important to the success of these RHD students was the recognition that frequent and regular group sessions contributed not only to progress but also provided motivation to continue the RHD journey. Two students expressed this in the following ways: *'The regular meeting times have provided accountability for my own progress' and 'I have found the RHD group invaluable, in fact I don't think I would have stayed in the Ed D program without it. As a professional working full time and juggling family commitments, it is incredibly difficult to maintain motivation for study.'* The final comment acknowledges the many challenges faced by part-time RHD students and it appears the group supervision model is of significant value to this group of students.

Relational insights

Students were asked to contribute three words to describe how they felt about the RHD group model of supervision and the words 'collaborative', 'supportive' and 'motivating' all featured strongly. Some students said that they felt 'privileged' and 'fortunate' to have experienced the camaraderie of learning in the group supervision model. Further evidence that relational factors were of significance to the students came in their responses to the question about effective features of the group. Students' responses included:

'I feel highly valued as a member of this group ...where dialogue is respectful & respected...in a non-threatening environment.'

'I have felt supported...without fear of being judged.'

'I am honestly disappointed when I can't attend.'

'I have become involved with my colleagues' projects – their successes have been meaningful for me also, and their disappointments have also impacted on me.'

Relationships between group members were quick to develop, possibly as an outcome of feeling supported in a challenging journey. Recognition that they were not alone reduced the sense of isolation often experienced by RHD students, in particular international students (Fenge, 2012; Hutchings, 2015; McCallin & Nayar, 2012). The ability to share experiences in a safe and supportive environment contributed to the students feeling a commitment to each other's progress.

The supervisor's role was an organisational element viewed by the students as critical, but with students' responses providing varied perspectives on the role including:

'For me, it's really important that the group is led by someone like (the supervisor). I'm more able to trust the feedback I receive [from peers] and what I'm learning because I know that if it's way off the mark, which it hasn't been, [she] will step in.'

'Setting the agenda collaboratively for the meeting - checking in with the group at the outset of meeting - moderating the meeting/ keeping the discussion on track – sharing important updates on any new events of relevance to the group.'

'Understanding of University and academic practices is critical...and to encourage and support, as well as challenge the student to critically think about their ideas/research.'

It is interesting to note that the students also provided many of these supports to others in the group; in particular encouragement, support, challenge and levels of expertise in specific areas.

However, as with research on effective communities of practice, a leader or champion plays a pivotal role in ensuring the sustainability and growth of the group (Hord & Sommers, 2008; Probst & Borzilla, 2008; Star et al., 2013) and the supervisor was perceived to be that leader. The students perceived that the role of the supervisor was to provide the vision for the purpose of the group, and to provide the conditions to enable that vision to unfold. Specific references were made by the students to how well the supervisor performed her role and how her friendliness and openness set a positive tone for the group.

While the supervisor was conscious of and attentive to her leadership role and responsibilities, she increasingly encouraged the students to provide feedback on, and insights into, their peers' work. Over time she has seen the students become increasingly confident in taking on this supervisory role. One student's reflection acknowledges this in saying that:

Group supervision with (the supervisor's) guidance and my peers' input has helped me to understand the process of research supervision better – experiencing an alternate model has been good for my development as a supervisor as well as a RHD student. We have all contributed to each other's work, so in a sense we have all shared the supervision role.

The significant value of learning in a community with others, especially when the group consists of people from international settings with diverse professional and personal interests and experience, has been acknowledged by all group members. The diversity in the group was noted and valued by one student, who said that:

Each member of this group has a unique situation or experiences that are important to learn from and with; this is valued firstly by the supervisor and harnessed for the benefit of others in the group.

The supervisor took care to ensure that each member, personally and culturally, felt valued. Examples of this inclusivity were the acknowledgement and explanation of different cultural holidays and festivities and sharing appropriate food at these times, and time taken to ask about and extend sympathy to students whose countries experienced natural disasters at the time. The relational outcomes for this group reflect Wenger's (1998) theory of social learning and its intersection of intellectual tradition with social structure and situated experience.

Intellectual growth

Intellectual growth was highlighted in many of the students' responses, which is not surprising given this is the primary purpose of undertaking a RHD. However, the students' responses highlighted how being a member of the group contributed to their intellectual growth. One student noted that:

I have found listening to the rest of the group really interesting, and have learnt a lot. We all have different research methods and methodologies, which I have really liked discussing...it has deepened my understanding of research and the language that is needed to express ideas at a doctorate level. I have experienced 'A-ha' moments that have really helped me progress and stay on track, it has been invaluable.

Another student reflected that they *'felt inspired and challenged to think about my ideas in a more critical and deeper way.'*

While intellectual growth would also be an expected outcome of the traditional model of supervision, in a traditional model students are generally only focused on their own research methodology and methods; with little opportunity to consider other methodological approaches and their relevance to particular research designs and epistemologies. The group model of supervision exposed students to a range of research designs and connected methodologies, resulting in broader understandings which, in turn, provide an ideal resource if the students transition to becoming academics supervising other RHD students. Such academic enculturation is a highly valuable outcome of the group model of supervision, as it provides a richer, situated experience than is possible with the traditional model of supervision.

The supervisor noted that all the students have made significant progress in achieving RHD milestones during the last fourteen months, some of whom had been stalled and had even considered dropping out prior to engaging in the group supervision model. The students have also noted an increase in their productivity and intellectual growth through this social learning context. One student said that *'committing to the group means there is enough pressure to keep me focused and contributing/producing, but the pressure is gentle – supportive and encouraging – not stressful'*. All reported that membership of the group has been an important factor in their learning progress and their ability to meet study requirements and deadlines. One student expressed it thus:

It has energised me significantly to keep reading, reflecting, writing and learning. I have learnt much more about the research process with people I trust; I don't feel intimidated in asking the questions that may be seen as trivial by some. It has helped me to be accountable for my work during the course of the year. I am more aware of the challenges and issues that others encounter and therefore am more prepared for what is ahead for my own research. I think it has helped me to stay in the course, keep me motivated and keep me more aware of what needs to be done.

Personal growth

In addition to intellectual growth, the theme of personal growth was identified through the data analysis. Personal growth was viewed as development in confidence, increased motivation for research and a shifting sense of identity from that of a research student to someone making valuable contributions to the supervision of colleagues. Students commented that *'I feel less isolated & more comfortable talking about my research'* and *'The group has had a significant impact on my confidence...I honestly feel that without the group it would have been likely that I would have withdrawn from the course.'* There was a

strong sense of personal growth in all students' responses, with one student reflecting on previous feelings of self-doubt when in a traditional one-on-one supervisory relationship being replaced by growing confidence in their research capability through the group model.

While many student responses focused on individual benefits and influences, several also considered the bigger picture by referring to the challenges and issues that others encounter, the national and international arena, learning from the attitude and behaviors of group members, watching the progress of group members, and the sharing of the supervision role. The following response from one student reflects a sense of value beyond the personal to each other's learning and the broader community, so the personal growth is viewed as the foundation for community growth.

Being able to learn about what others are studying, their interests, etc. is beneficial on many levels. As a group we can support each other and forward related readings, etc. when we come across them. Right from the start of our study we are 'networking' and sharing our research with people who are not only studying, but working, in areas directly relevant to our study. We are able to adapt our way of communicating and to a certain extent our study so it is more relevant/useful to the people, discipline, etc. where it takes place.

Personal growth linked to a growing confidence in self as a researcher and co-supervisor is a valuable outcome for the academy given the increased interest in people undertaking RHD programs and the subsequent need for effective and motivated supervisors. The supervisor noted that her own experience of the traditional model of RHD supervision did little to prepare her to be a supervisor of others' research as she was primarily focused on her own research and not the role of the supervisor. The group supervision model allows those involved to experience the journey of more than one candidate and to act as co-supervisors. This broader scope of expectations, processes and outcomes may serve as a valuable resource when transitioning to the role of supervisor.

Discussion of findings

Some students in this study were new to research and had no other experience of RHD supervision, whereas other students had previously experienced both one-to-one or two-or-more-to one supervision models. For all of the students (and for the supervisor), this was their first experience of a group supervision model. For everyone involved, without exception, the group supervision model proved to be a positive, motivating and energising experience. At least two of the students had seriously considered withdrawing from the RHD program, but had stayed in the program purely because of the enhanced sense of support and connection experienced in the group context.

Jairam and Kahl (2012) described the RHD experience as the 'pinnacle of education' but in reality, many RHD students find it to be a very negative experience. Clearly for students to be accepted into a RHD degree, they have proven intellectual capacity and academic success, even though 'Doctoral study is irrefutably hard, and many seemed to underestimate the difficulty and other intellectual and emotional pressures' (Holbrook et al., 2014, p.342). It would seem that academic

capability alone is not sufficient for RHD completion. Ali and Kohun (2007) estimated that 'about 50% of the students who enter doctoral studies end up dropping out before attaining their degrees (Hockey, 1994; Lovitts & Nelson, 2000; Powers 2004)'. They found that social isolation was a significant factor in students' decision to drop out. Another significant factor in RHD student attrition is dissatisfaction with the supervision and in particular the supervisory relationship (Fenge, 2012). The findings from this study show that both dissatisfaction with supervision and social isolation can be addressed through the group supervision model because of the collegial nature of peer learning and supervisory support in the group context.

Boud and Lee (2005, p. 503) stated that:

Notions of the research education environment as pedagogical space involving multiple and overlapping notions of communities of practice are in contrast to the conventional focus on individual supervision relationships as the privileged if not the only acknowledged site of pedagogy.

Expanding the RHD supervision process to include a group model where the RHD students, in relationship with each other and their supervisor, share the intellectual and social functions of learning and teaching, can foster a more sustainable and realistic understanding of the research process and the role of supervision within it. Some students in this study expressed initial concerns that, in their busy lives, they were reluctant to spend time thinking and talking about other students' research, particularly when it involved different methodologies and largely unrelated contexts. Their focus was on their own individual research and achieving their own requisite milestones. However, those same students were surprised to find that, rather than a distraction to their own research, the group supervision experience had expanded their view of the research process and had expedited their own achievement. All participants made significant progress, and importantly had enjoyed the challenge, collegiality and insights gained through working as a community of scholars. From the supervisor's perspective, an initial concern that the investment of time in the group meetings (which supplemented but did not replace individual meetings) would be an imposition on her time proved to be unfounded: she found the group meetings energising and uplifting. These findings were largely unexpected outcomes.

RHD students, particularly in education, have extensive experience in learning and teaching and an identity as a teacher. Part of the transition required to become a successful RHD student is to think like a researcher and to identify, not just as a practitioner, but as a researcher. The RHD students in this study reported increased confidence in their research expertise and an enhanced sense of identity as a researcher. Perhaps this is something that is missing from the traditional supervision model where the RHD student is positioned as a student seeking confirmation from their supervisor that they are making progress with their studies. In the group supervision model, where the supervisor empowers students to review each other's work and consider a range of perspectives about approaches to research, the students learn to think like a supervisor. For instance, most RHD students would only complete one ethics application, and only have to think about ethical considerations relating to their own research. In the group supervision model, everyone

in the group can consider several different ethics applications, involving a range of different ethical issues, and in the process can develop a deeper understanding of ethical principles and practices and their application to a wider body of research.

Conclusion

While the individuals in the group, the range of research projects, methodologies and contexts were all very diverse, there seems to have been a cohesiveness that helped all members to feel engaged and valued in the process. To what extent is the success of the group supervision model in this situation attributable to the group model per se and to what extent is the individual personality of the supervisor an influential factor? Could all supervisors potentially experience similar success, is there a necessary preparation required, or is it only a model that would suit supervisors who value and demonstrate strong relational skills?

Another question raised relates to the diversity of the group members. While there are many individual differences, there are also commonalities, such as similar age and a similar interest in professional learning in education. The process of engaging with this research undertaking (conference presentation and journal article) has added another common goal and process to consolidate the group cohesion. Is the success of the group supervision model related to having common elements or can a group supervision model be successful in any context, with any students, irrespective of their age, field of research or research methodology?

The experiences of one group have proven to be resoundingly positive in endorsing the group model of supervision. The supervisor is committed to continuing this model and working with colleagues to help them to establish similar RHD groups within the faculty. At whatever stage of their RHD journey these students have experienced the group supervision model, they have made considerable progress, felt supported, less isolated and have enjoyed the experience. All are committed to continuing with the group and committed to completing their RHD. The knowledge that they have each made a contribution to each other's completion and collaboratively worked toward that common goal will result in not one but multiple celebrations of completions. A further outcome will be the generation of a new cohort of RHD supervisors with valuable experience to bring to their new roles in academia or as leaders in the wider community.

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Quality (assurance) in doctoral education

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Abstract

Possibility can imply normativity when it comes to indicators¹ for quality and performance: just because you can measure something it is implied that you should. Not all measures are equal, however, and this is certainly the case when it comes to indicators for quality in doctoral degree programs. This paper provides an overview of the literature on quality assurance in doctoral education along with findings from the inaugural Special Interest Group workshop on quality assurance hosted at the biennial Quality in Postgraduate Research (QPR) conference in Adelaide, Australia. Workshop participants were invited to reflect on the characteristics associated with quality PhD programs, the kind of indicators through which these might be reflected and some of the challenges associated with balancing competing priorities in sustaining quality doctoral degree programs. Participants found that tensions can arise between what we might imagine a quality research doctoral program to be, the tools that are available to demonstrate or communicate evidence of quality and the pressures faced in responding to external policy and funding priorities.

Keywords

quality assurance; doctoral education; performance indicators; public policy

Quality and quality assurance

Quality assurance (QA) has become a somewhat esoteric catch-all term for a broad range of monitoring, review and improvement activities undertaken in higher education. A simple take on QA is that it should allow you to identify strengths and examples of good practice, identify opportunities for improvement and demonstrate quality and performance for both internal and external stakeholders (Woodhouse, 2012). Much of the talk around QA internationally is related to external quality assurance (i.e. from the perspective of governments, accreditors or quality agencies) (Harvey & Williams, 2010a) while considerable efforts seem devoted to internal quality assurance (or at least, internal efforts in responding to the requirements and expectations of those external agencies) (Harvey & Williams, 2010b). Governments, institutional leaders, students and academics may not all share the same priorities: what counts as quality can look different from each perspective. The alignment of internal priorities, stakeholder perspectives and external factors features among the principal challenges in program management. Demonstrating how this is done and assuring that it can reliably be done on an ongoing basis presents additional challenges. This paper summarises findings from a workshop aimed at highlighting these issues and challenges.

Quality Assurance in Doctoral Education

Quality assurance in research education has a different character to that for other qualification types. This is reflected at a very general level in the descriptors found in the broad cycles of the Bologna process (Carter et al., 2010) and in the various frameworks for qualifications internationally (Raffe, 2003; Bologna Working Group on Qualifications Frameworks, 2005; Bienefeld et al., 2008; DEEWR, 2010; Australian Qualifications Framework Council, 2013). While the broad descriptors outlined in these are relatively consistent when it comes to research degrees, policy and practice around quality assurance has a different emphasis when national and regional educational systems are compared.

Major initiatives in support of quality in postgraduate research in Europe have been supported by European Universities Association's Council for Doctoral Education and other Europe-wide quality networks, and these have directly informed relevant aspects of the Bologna process. Notable initiatives include development of The Salzburg Principles and Salzburg II Recommendations (Christensen, 2005; EUA, 2010), the ENQA workshop and subsequent report on Quality Assurance in Postgraduate Education (Bitusikova et al., 2010) and the ARDE Project on Quality Assurance in Doctoral Education (Byrne, Jorgensen & Loukkola, 2013).

Developments around quality assurance in the UK have been supported by the UK's Quality Assurance Agency along with groups such as the UK Council for Graduate Education. These tend to have a comparatively sharper focus on quality and standards when compared with those of other educational systems. Relevant initiatives include development of Quality and Standards of Postgraduate Research Degrees (UKCGE) (Clarke & Powell, 2009), the articulation of Doctoral Degree Characteristics (QAA, 2011) and the development and revision of a UK code of practice for the assurance of quality in research degrees (QAA, 2004, 2014).

Innovation in quality assurance for doctoral education in the United States has had quite a different flavour, with greater emphasis on program evaluation and on the development of indicators as a basis for comparing quality between programs and between institutions. This approach has a long history in the US, with *A Study of the Graduate Schools of America* being published by Raymond Hughes in 1925, and Allan Cartter's *An Assessment of Quality in Graduate Education* published in 1966. More recent initiatives include the assessments of research doctoral programs undertaken by the National Science Foundation (NSF) (Ostriker, Kuh & Voytuk, 2003; 2011) and an emerging dialogue around the development of 'fit for purpose' Research Doctoral Graduates in the United States (Nerad, 2014).

Discussion around quality in doctoral education in Australia can more or less be 'sign-posted' by a series of system-level policy initiatives undertaken by the Australian Federal Government (Palmer, 2013). In each case the prospect of policy reform,

¹ For the purposes of the workshop and this paper the term indicator is used in its broadest sense – as anything reflecting a (potentially quantifiable) presence or absence of something else.

often as a potential outcome of a structured review process, has been a significant catalyst for sector-wide engagement on issues relevant to quality and quality assurance in doctoral education. Examples include an early report on quality commissioned by the (then) National Board of Employment, Education and Training (Chubb, 1991), the Building Australia's Research Capacity report from the House of Representatives Inquiry (2008) and the Defining Quality consultation paper (DIISR, 2011). More recently, a significant contribution to this area has been made through development of good practice resources including the Good Practice Framework for higher degree research (Luca & Wolski, 2013) which anticipated the implementation of a Standards Framework which would encompass research education (Department of Education and Training, 2015). Finally, the final report of the recent Review of Australia's Research Training System has prompted a renewed focus in Australia (as elsewhere) on research graduate industry engagement and employment outcomes (McGagh et al., 2016).

An undue focus on indicators?

Each of the initiatives outlined above, regardless of their context, have sought to define or describe characteristics associated with quality in postgraduate research. While there are differences in these examples between national and regional educational systems many, in fact most, have sought to describe how quality could or should be measured. For better or for worse indicators have featured prominently in discussions around quality. The follow-on effects through institutional practice have arguably led to both an over-use of quality indicators by institutions on the one hand and a growing cynicism and dis-engagement on the part of the broader university community on the other.

For example, a recent study by Cheng et al. questions the emphasis placed on performance indicators and how we engage with them:

The word 'quality' has become hijacked by external measures, and we sort of go 'OK, yes, we have to do that to meet the 'quality' indicators'....But I never think about quality when I'm working with my own students.... I think about things like growth....From Cheng et al. (2016, p.10).

Broader criticisms of QA strategies include that they can be reductive rather than expansive (Tennant, 2008), normative rather than innovative (Sampson et al., 2016) and merely performative, being unrelated to actual quality (Olssen & Peters, 2005; Blackmore, 2009). Many consider quality assurance in general, and performance measurement in particular, as symptomatic of or even instrumental to a broader managerialism afflicting the modern university (Morley, 2003; Palmer, 2014).

The proceedings from the QPR conference in 2000 (Kiley & Mullins, 2000) mark an interesting point in time on the issue of quality measurement from both a public policy and quality assurance point of view. Contributions to the conference

reflect concerns regarding the Australian Government's reform agenda of the time and the potential impact a greater emphasis on 'quality assurance' may have – noting the increased role for performance measurement proposed at the time (Kemp, 1999b, 1999a). These changes would form the basis of what would become Australia's Research Training Scheme (RTS) (Palmer, 2013): a performance funding framework for research education which remained largely un-changed between 2002 and 2016.

The pursuit of valid and reliable indicators for quality has been among the hallmarks of developments in 'QA' internationally. Yet leading figures have sought to remind us time and again that a narrow emphasis on performance metrics can be misguided, poorly informed or just plain wrong (Linke, 1992; Ramsden, 2003; Baird & Gordon, 2009). This does not seem to alter the fact that we are increasingly called upon to account for quality and performance via sometimes questionable metrics. If we could change the system, what would we do?

The workshop

Eighteen participants took part in an expert group workshop held as part of an inaugural Special Interest workshop on quality assurance during the 2016 biennial Quality in Postgraduate Research (QPR) conference in Adelaide, Australia. Participants were invited to engage in structured activities as a tool to help inform the development of appropriate indicator strategies for evaluating, comparing and assuring quality in research doctoral degree programs. Aims for the workshop included supporting discussion on quality in graduate research, how it might be defined and measured, the usefulness of the various indicators for quality and their alignment with external priorities. The workshop was hosted as three structured activities followed by a summary session for the QPR Quality Assurance Special Interest Group (SIG).

Internal quality assurance was the focus for the first two activities of the workshop. For Activity I participants were invited to form groups and consider the characteristics associated with quality in doctoral education.² Participants were encouraged to consider these in regard to the candidates, programs, outputs or outcomes associated with quality research doctoral degree programs. Participants were then invited to collaborate in summarising these characteristics into a single ranked list for each group. In Activity II participants were invited to consider the sources of evidence they might use to reflect quality in doctoral degree programs, and how these might align with the characteristics they identified in Activity I. Activity III of the workshop focussed on external quality assurance. The activity was conducted through a scenario whereby participant groups assumed the perspective of institutions with funding profiles 'negotiated' with a hypothetical Federal Government. Participants were invited to consider how well their own priorities aligned with the quality priorities of Government and their associated (hypothetical) performance funding arrangements.

² For the purposes of this workshop this was taken to refer to doctoral degree programs with a substantial research component.

Findings and discussion

Outcomes for participants included opportunities to reflect on and discuss their perceptions and expectations regarding quality in doctoral education with their colleagues. Group activities were fairly straightforward when it came to identifying characteristics associated with quality in research doctoral programs, but sustained discussion was required when it came to the challenge of summarising these characteristics into a single ranked list. Selected themes identified in Activity 1 are summarised in Table 1 below.

For Activity II participants were invited to consider the sources of evidence they might use to reflect the presence or absence of the characteristics identified in Activity I. Student surveys, publication measures and enrolment metrics featured prominently as sources of evidence. Other opportunities for demonstrating quality included evidence of external research partnerships, participation in 'study abroad' activity and the evaluation of non-traditional research outputs. Evaluation of an institutional supervisory 'profile' and of associated development programs also featured in group discussion as potential sources of evidence for demonstrating quality.

Activity III was conducted through a scenario whereby groups of participants assumed the perspective of institutions with funding profiles 'negotiated' with a hypothetical Federal Government. Participants were invited to consider how well their own priorities aligned with those of Government via their associated (hypothetical) performance funding arrangements. The scenario entailed a substantial loss of autonomy in establishing and evaluating the characteristics and indicators associated with quality in doctoral degree programs and was met with a corresponding sense of frustration on the part of workshop participants. This highlights that while government policy is often necessary for ensuring minimum standards and in identifying and rewarding excellence it might also have the effect of eroding the morale of otherwise well-intentioned and motivated stakeholders who may share the same aims when it comes to promoting and enhancing quality. Activity III also had the effect of incentivising the 'trading off' of characteristics and indicators previously deemed important

and motivated 'ad-hoc' QA activity through various forms of collaboration and exchange between groups.

Conclusion

Just because something can be measured doesn't mean that it should be, and not all measures are equal. This is certainly the case when it comes to indicators for quality in doctoral degree programs. Tensions can arise between what we might imagine a quality research doctoral program to be, the tools that are available to demonstrate or communicate evidence of quality and the pressures faced in responding to external policy and funding priorities. This paper summarises findings from a workshop aimed at highlighting these issues and challenges through a series of structured activities. During the workshop, participants gained insights into the use of indicators of quality and performance in doctoral education, and their alignment with external priorities.

In addition to addressing the alignment of indicator strategies with internal priorities, stakeholder perspectives and external factors, perhaps it would also help to be able to be more explicit about what was both feasible and useful. Opportunities for future development include exploration of the comparative utility of commonly used indicators of quality and performance and the relationship between the perceived salience and utility of quality indicators for postgraduate research. Exploration of the combined salience and utility of indicators for quality in research education and further development around evaluation in the choice of indicator strategies may help refine institutional quality assurance strategies and mitigate the un-constrained over-use of performance indicators.

Beyond this, broader engagement on quality assurance in general, and on indicator strategies in particular, may help address some of the criticisms in this area, and also introduce greater accountability in the choice of indicators used. The definition and measurement of quality and how it can be communicated can only benefit through broader engagement. Bringing a diverse range of stakeholders into conversations around quality would be to the benefit of all.

TABLE 1: SELECTED FINDINGS FROM ACTIVITY I: CHARACTERISTICS ASSOCIATED WITH QUALITY IN RESEARCH DOCTORAL DEGREE PROGRAMS

| Rank | Example 1 | Example 2 | Example 3 |
|------|--|---|---|
| 1 | Research Excellence | Regular, relevant and engaged supervision | Intellectual habits of mind |
| 2 | Knowledgeable and engaged supervisors | Candidate wellbeing | Supervisor development that is engaged and responsive |
| 3 | Engaged and empowered candidates | Timely completion | Effective recruitment of candidates |
| 4 | Clear expectations for candidates | Talent retention | Access to quality infrastructure and resources |
| 5 | Well-resourced research infrastructure | Employability | Access to high quality support and mentoring |
| 6 | Vibrant research culture | Innovation | Flexible, individualised candidature plans |

Appendix I QPR Quality Assurance Special Interest Group

Aims of the QPR QA SIG include supporting discussion on relevant issues and building an enduring community of practice to further QPR-related interests both within and between conferences.

The structure of the QPR QA special interest group (SIG) is outlined below.

The QPR QA SIG will:

Organise, at QPR, a SIG event involving, for example, a round table, structured open discussion, project development session, academic development or workshop session in the time schedule for that purpose (normally planned to be approximately 90 minutes).

Report annually on activity, with the report posted on the QPR website or via a website linked from the QPR website.

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|--|--|
| Name of SIG | <i>Quality Assurance in Research Education</i> |
| Focus of the SIG | Quality assurance and related issues as they pertain to postgraduate research. |
| Brief statement of the importance of the SIG and how it is relevant to QPR. | While <i>quality</i> certainly seems to be a common consideration in postgraduate research (and is the <i>raison d'être</i> for QPR) <i>quality assurance</i> remains a relatively niche and, for some, esoteric area of activity in research education. The <i>Quality Assurance in Research Education</i> SIG aims to: Support engagement on issues around 'QA' in research education; Provide a forum for collaboration and resource sharing on these topics; and Become a hub (over time) for good practice for quality assurance as it pertains to research education. |
| Next steps | Themes and resources that could be developed through the SIG might include: Good practice; Benchmarking; Standards; Risk management; Indicators; Self-review; and New approaches to QA in research education. |

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Trans-Pacific Doctoral Success – A Collaborative Cohort Model

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Abstract

The San Jose Gateway PhD program is a doctoral partnership between the School of Information at San Jose State University (SJSU) in the USA, and the Information Systems School at the Queensland University of Technology (QUT) in Australia. Because of Californian legislation, SJSU has not been able to offer PhD degrees. The Gateway Program therefore provides a research pathway for SJSU's coursework students. It also helps the School to grow the research capacity of academic staff. For QUT, the Program provides the opportunity to advance research agendas and to build strong international connections and partnerships. The Program began in 2008. It is a distance-delivered cohort-based scheme with new students commencing in August of each year. All students are enrolled as part-time students in QUT's Doctor of Philosophy. Each student is assigned supervisors from both universities. In addition to individual and group supervisory meetings, all students and supervisors meet in a virtual meeting space once a month. The online monthly meetings are supplemented by two residential events each year: (i) a one week face to face residential in August at San Jose State University, and (ii) an online residential in March. This paper will critically reflect upon this unique Program, which has led to high quality research outcomes, rapid completions, and noteworthy graduate employments. Critical consideration of the challenges and future proofing of the approach will also be explored.

Keyword

distance education; cohort-based program; part-time students; multi-national partnerships; higher degree research education.

Introduction

How can two universities on opposite sides of the Pacific Ocean work together to deliver a successful doctoral program? What elements are needed to deliver a doctoral program with partner institutions in different countries? This paper presents a unique collaboration between San Jose State University (SJSU) School of Information in the United States and Queensland University of Technology (QUT) Information Systems School in Australia to create and provide a distance-delivered cohort-based doctoral program, called the San Jose Gateway PhD Program, in the library and information science discipline. This San Jose Gateway PhD program (SJSU, n.d) was initially established as a way to enable SJSU to offer a PhD program, which it was not able to do due to California state legislation. In addition to achieving this objective, the partnership has also

proven to offer many other benefits to each institution. For example, the San Jose Gateway PhD Program helps SJSU grow the research capacity of academic staff and provides the opportunity to advance research agendas and to build strong international connections and partnerships for QUT. The San Jose Gateway PhD Program, which commenced in 2008, has produced nine graduates as of 2016 and all completed within the recommended timeframes; most graduates achieved completion within four years part-time and two received top thesis honours at QUT. This paper critically reflects upon this unique Program; it begins by first exploring the key literature relevant to the provision of higher degree research education especially in the context of distance or online delivery. The paper will then outline the San Jose Gateway program including a discussion on the key lessons learnt.

Literature review

Higher degree supervision of doctoral students has always required a balancing between the processes of engaging in research, and learning to be a researcher. There are many different facets to the experience of bringing about learning in the doctoral educational program (Bruce and Stoodley, 2014). While demographic variables and personality traits remain important factors for successful completion, emerging research shows that the intentional design of program elements can contribute to higher graduation rates and scholarly outcomes (Burnett, 1999). This is especially important for doctoral programs offered in a distance or online mode, where student isolation continues to be identified as a key concern, as do the possibilities of receiving nuanced feedback from supervisors (Nasiri & Mafakheri, 2015).

Significant trends in supervision are emerging, particularly in doctoral programs situated outside North America, and include an increasing reliance on team supervision (see, for example, Erichsen et al, 2014; Fenge, 2012; Manathunga, 2012, Watts, 2010). The addition of multiple perspectives on a student's work increases their chances of successfully completing the doctoral program (Chipere, 2015), and deepens the student experience by allowing different team members to take on various roles as the student progresses through candidature (Erichsen et al, 2014; Manathunga, 2012). Despite the multiple benefits that can come from team supervision, the team-based model can add complexity for the student if disagreements or power struggles characterise the team (Manathunga, 2012; Watts, 2010). Related to the trend of team supervision is a recognition of the benefits of peer learning and cohort models. The development of critical thinking skills and social cohesion (Stracke, 2010) as well as reinforcement of professional identity (Fenge, 2012) can be enhanced in the group or cohort setting.

New work is emerging that examines the role of online learning in doctoral-level study. While student satisfaction and success can be achieved (Erichsen et al, 2014; Harrison et al, 2014), traditional elements of successful supervision must be replicated in the online environment. In addition to providing robust technical platforms from which students and supervisors can operate, frequent contact, relevant and timely feedback, and personal characteristics of both the student and supervisor remain important elements in any program, regardless of delivery format (Chipere, 2015; Cross, 2014; Lee, 2008; Nulty et al, 2014).

The San Jose Gateway PhD program described in this paper is a unique partnership between two universities. The program has sought to implement some of the positive practices as well as address some of the challenges raised in the research literature by building a learning community of doctoral candidates and supervisors in a distance learning environment across two continents and incorporating elements of the cultures of both continents.

The San Jose Gateway Program

The San Jose Gateway PhD Program is a unique partnership between SJSU and QUT. It is set up as a part-time doctoral program for students who reside outside of Australia, primarily those who are from the United States and Canada, though the student body has become increasingly international since the program began. Students have up to 7 years to complete their degree, and firm milestone completions are expected after six months (Stage 2 milestone) and after two years (Confirmation of Candidature). Students then have several years to work on their dissertation, with the final stage involving a Final Seminar and external review of their thesis. Students have supervisory teams of three people (one from SJSU and two from QUT) and receive mentoring and support from the broader SJSU and QUT faculties and their doctoral student peers. This section provides background on how the program began and how the program is currently offered, including a description of the teaching and supervision methods used.

How the program began

SJSU stakeholders had identified a challenge for their institution. Due to California state legislation, SJSU was not allowed to offer PhD degrees but had aspirations to become more research intensive, increase its research profile, and grow the research capacity of its academic staff. SJSU was looking for a partner institution that it could work with to offer a joint PhD program. SJSU found an interested partner in QUT, and the stakeholders from the two institutions began informal discussions in 2005. From the QUT perspective, working with SJSU could increase the pool of doctoral supervisors and students in a particular discipline area, thus enriching research in that discipline. Goodwill on both sides was needed as the SJSU and QUT stakeholders discussed the possibility of creating a unique doctoral program that would provide a gateway to the QUT doctoral program and as the stakeholders defined how this innovative model could work.

The result of these discussions was the creation of the San Jose Gateway PhD program in 2008. This program is an external QUT-led doctoral program, supervised in collaboration with researchers from the San Jose State University in the United States. QUT provides the degree and students follow the rules and requirements of the QUT doctoral degree. The San Jose arm of the partnership includes supervisors who are research active, and who have expertise in working and teaching virtually. Thus, each student in the Gateway program has three supervisors: a lead supervisor from SJSU, a Principal Supervisor from QUT, and an Associate Supervisor from QUT. Students work very closely with their SJSU supervisor on initial versions of their work, which is then regularly reviewed by the QUT supervisors. In this way, students benefit from having a strong supervisory team.

An important element in the success of the Gateway PhD program was the training of SJSU doctoral supervisors by QUT. As there are significant differences in the doctoral education models in the United States and Australia, the two institutions needed to work together to develop effective and innovative practices. Specifically, in the United States, doctoral education typically involves two years of coursework, a comprehensive exam and defence of the doctoral proposals, and a formal defence of the dissertation. It took some time for the American and Canadian faculty at SJSU to get used to the QUT research-focused doctoral education model, which did not require formal coursework and instead involved more directed readings and learning. Additionally, since it was new for the SJSU faculty to supervise doctoral students and SJSU faculty were not familiar with QUT practices and policies, QUT supervisors provided valuable training and mentoring for the SJSU supervisors.

How the program is currently offered

In addition to supervising students, SJSU is responsible for the marketing, recruitment, and initial vetting of potential doctoral students for the San Jose Gateway PhD Program. Admissions to the first cohort in 2008 were drawn from current staff and graduates from the SJSU Master of Library and Information Science program who wished to, and were well suited to undertake PhD studies. After the first couple of cohorts, a wider recruiting net was cast and the reputation of the program is now well established; there is broad awareness of the San Jose Gateway PhD program and strong interest from applicants, with more than one hundred expressions of interest received annually. Annual cohorts of students are admitted and begin their program in August. Cohorts have ranged in size from one to nine students, with the average annual intake of four students per year.

Once a candidate student is endorsed by a SJSU faculty member, which signifies the SJSU faculty member's willingness to supervise the student's work, a list of all of the endorsed candidates is reviewed by the SJSU Director of the School of Information. The director discusses the ranked list of candidates with the lead partner at QUT to determine the final applicant pool. Then the selected applicants are invited to formally apply to QUT for admission to the doctoral program. Candidates must meet QUT's admission standards, including the requirement to have demonstrated research experience.

The San Jose Gateway PhD program follows the QUT doctoral program structure, but SJSU and QUT supervisors have modified some of the structure to facilitate the distributed and part-time nature of the program. Technology plays a central role in ensuring that the program goals for deep interaction, regular communication, and knowledge management are met. Communication tools like Skype and Blackboard Collaborate (a web conferencing system), and Blackboard IM (an instant messaging tool), in addition to email communication, provide important support for student and supervisor interaction. These tools are used for individual and group supervisory meetings, as well as for monthly web conference meeting with all students and staff and for a two-day virtual residency.

Wikis are used for storage of critical QUT program documentation and for sharing of doctoral student work; these online resources are annually reviewed, as they are critical teaching and learning tools for both students and supervisors

and are key to ensuring everyone remains aware of QUT HDR policies and procedures. These learning resources cover, for each cohort, their literature reviews, research methods, writing, working with your supervisors, ethics, thesis writing and presentation resources. These resources are designed to allow both independent and community learning and to cater for a distance learning population. QUT also provides online training for specific skills for both doctoral students and supervisors. SJSU provides a broad orientation for incoming students faculty to the technical tools most frequently used in the program, and students are also able to audit online classes in the SJSU School of Information's program as needed.

Details of program design

The program design includes student and supervisor participation in an annual onsite residential, an annual virtual residential, and monthly web conference group meeting, in addition to regular virtual contact between students and supervisors. These elements enable the successful management of the program, which includes overseeing development of supervisors, induction of research students, development of training resources, design and implementation of week-long face to face development opportunities, and evaluation strategies. Each of these program elements utilizes support strategies to achieve quality supervision, as elaborated below:

1) On Site and Virtual Residencies

Two residencies take place each year: an annual one-week on site residency in San Jose, California in the United States in August and an annual two-day virtual residency in March (in 2014 this replaced the annual residency that took place at either the ALISE or ASIS&T annual meeting). The annual residency in San Jose is attended by two QUT supervisors, all of the SJSU supervisors, and all of the Gateway students (regardless of what stage of the program they are at). Students enjoy working with a cohort of doctoral students at these residencies; the residencies provide an opportunity for the students to engage both personally and academically.

The residencies have evolved from workshops for inducting new students and supervisors, initially largely facilitated by the QUT team, to a conference style seminar/workshop program managed by San Jose supervisors and involving many facilitators from the students and supervisory team. Students are encouraged to contribute from as early as possible to enhance their research leadership capabilities. These events typically include, for example:

- A three-minute thesis event
- Poster presentations
- Literature review, methodology, and other milestone preliminary and final presentations
- Peer learning and support activities, e.g., writing for publication, presenting at conferences
- 'Reflective' seminars where students critique their own performance as well as respond to commentary from others. Commenting students document their thoughts in writing.
- Guidance around milestones, including confirmation and final seminar presentations.

Residencies are evaluated annually and feedback informs the following year's programs. Typically, new cohorts/students seek a high level of scaffolding and guidance, making a key task of the program the need to bring them to a place where they can be comfortable with a high level of collegial working, as opposed to direction. This shift usually takes about twelve months and is supported by monthly web conferences attended by all students and supervisors.

2) Monthly Web Conference Group Sessions

Students meet virtually for two hours each month to share their work with each other and with all of the SJSU and QUT faculty. Monthly web conference attendance is well established as a requirement for students in the program. These two-hour meetings are an important supervision space, and also a space where supervisory teams receive support from the wider group. Students bring their work in progress, issues in need of discussion and are supported by wide ranging constructive conversation. Students begin to get exposure to the quality of work being generated by peers at later stages of candidature. It also means that new supervisors and students are well supported in learning how to review and assess the quality of work. Great attention is especially devoted in early stages to ensure students reached the six-month Stage 2 milestone. It does take a while for new students to perceive the value of group meetings where they are involved in responding to the work of others; the established pattern over the last eight years is that perseverance pays off and students become committed to their peers, learning about a very wide range of research processes, topics and methods as they engage with the larger community.

Part of the research training is exposure - through these monthly web conference sessions and annual face to face/virtual residencies - to literature reviews, methods and critical staged milestone documents aimed at supporting progress. Students in the cohort draw momentum and inspiration through sharing the research journey in this very overt environment. The rich diversity of topics and methods provides exposure and training for participants in a variety of valid research approaches both qualitative and quantitative. The capacity to engage in discussion across this range of work and critically comment and evaluate represents a unique research learning experience. This participation in a wider doctoral community enriches the doctoral learning experience, builds their confidence in communicating about research and drives a level of expectation about progress and quality of work. The collegial sharing allows new PhDs to see the shape and form of a PhD, which helps them to understand the size of the work and the nature of the contribution they will need to make.

3) Supervisory Mentoring

In addition to the program elements that support student learning and progress, there is a strong focus on general supervisory mentoring. Senior supervisors, especially the QUT team, engage in supervisory mentoring which involves role modelling and guiding supervisors in best practice for supervision, negotiating topics, high levels of communication around expectations, scaffolding the early stages of the process, and identifying and resolving issues early where possible. The supervisory team (which like the students is also

external and distributed), has formal meetings (twice a year) and as needed to discuss student progress, supervisory processes, learning styles, meeting different needs, balancing independent learning and formal instruction, as well as conflict resolution. These group processes are usually highly productive, but can involve a bit of balancing student privacy and confidentiality; where challenging cases arise these are usually managed in detail by a specific sub group of supervisors and other advisors.

Learnings from the Program

The fact that this is a learning community, for both the students and the supervisors, has always been a central element of this program. Being part of a broader research group has always been beneficial. It is a model replicated over not just decades, but centuries since early research programs began, because it has proven its worth for both students and their supervisors. Replicating this via an online community is not as common, nor as simple, as it sounds. Challenges have included those expected when participating in both synchronous and asynchronous meetings, and the expected challenges that arise without visual and sound when attending online meetings or when communicating via emails. Unexpected challenges have also arisen, some of these presented below. Our team has approached these challenges with an open mind, remembering always that we are all learning how to achieve from this partnership all that we hope for. There are several learnings from this unique partnership and a new doctoral supervision model in the San Jose Gateway PhD program. A key component leading to the success of the San Jose Gateway PhD program has been building a research learning community. Another factor contributing to the program's success has been the continual learning and refinement of the model to adapt to the changing needs of the doctoral students and to address program feedback. This section also shares some of the student and faculty perspectives on the program.

Building the research learning community

The vital elements over the years have proved to be the development of strong virtual communities of practice where supervisors work together and support each other and students have a network of critical friends, including peers, beyond their own supervisory team. While QUT staff originally took responsibility for the initial program design, over several years, it has become jointly owned and continuously monitored and improved based on the needs of participating students and supervisors.

Pivotal to the success of the program is the student experience of developing a research learning community that extends beyond graduation and their supervisory team. For example, students typically connect with their cohort and maintain close communication throughout the year. Past students (both completed students and those on leave) can, and frequently do, attend the annual residency in San Jose. Those in and around the Bay area have independently set up social support opportunities three to four times a year. Past graduates become supervisors and/or mentors for other students.

Continual refinement

The San Jose Gateway PhD Program has continued to evolve since it began in 2008, and this evolution and refinement can be

characterized in three phases: 1) Start Up, 2) Development, and 3) Evolution.

1) Start-up phase - Laying the Foundation (Years 1-3)

As the new program was getting established, strong role modelling by QUT supervisors was required, for example, the QUT supervisors lead the design and development of the first residential programs and training for new students and supervisors. QUT supervisors invested time to be assured of the calibre of the graduates and staff and to facilitate admission into the QUT PhD program for identified applicants. A key point in this process was the common commitment to the shared areas of research strength. Over time, the capacity of applicants to address the admission criteria has improved and their capacity to address entry processes has been refined.

Both QUT and San Jose were committed to supporting students, primarily from the United States and Canada, to pursue their studies at a distance, with scaffolding provided by faculty at SJSU and QUT. To do this appropriately, infrastructure and funding were required. The model has been refined but always involved a QUT principal and associate supervisor working with an on-site paid San Jose supervisor for each student, with the SJSU supervisor taking a key leadership role in the student learning experience. This represents a greater commitment of supervisory capacity than is usual at QUT where only a principal and associate supervisor would be required. Effectively, the principal supervisor plays a dual role, supervising the student and mentoring the novice San Jose supervisor who, more recently, are new graduates from the program themselves. The need for mentoring of SJSU supervisors has decreased over time, as SJSU supervisors gained more experience in doctoral supervision and specifically gained more knowledge of QUT policies.

In the early years, it was important for students and supervisors to work through the implications of a cross-cultural program, where an Australian Degree was being granted. The status of such a qualification in the United States was still uncertain and required clarification for prospective doctoral students. An important focus in these early years, and ongoing, was community building, and this has turned out to be a big strength of the program. Community building has been achieved both through the virtual and on site residencies and through the monthly web conference sessions, and has resulted in strong and lasting bonds among doctoral student and with supervisors.

2) Development Phase - Graduates Helping Drive the Program (Years 4-7)

After the first couple of years, the SJSU faculty took the lead role in organizing and leading the annual onsite residency in San Jose, with advice from QUT colleagues. Within four years, graduates from the program became involved in program leadership, and began to move into supervisory roles. During this time, stability in the program was maintained through limiting the number of QUT principal supervisors to a team of three: Professors Helen Partridge, Christine Bruce and Sylvia Edwards. During this phase, QUT associate supervisors had also previously worked closely with the Principal supervision team, and were familiar with the supervision 'culture' established.

Engagement of the staff in this phase has been rewarded by a very productive cohort, able to generate high quality research outputs, which in turn have led to enhanced employment outcomes after graduation. This research output was deliberately driven by provision of funding by QUT to assist students to publish. The return on this investment has been co-authored high impact publications with supervisory teams (See Appendix A). During this phase several students graduated from the program, establishing markers of success, and started to gain employment. As students began to publish, and become invited to academic and industry-research positions faith, in the program was strengthened.

3) Expansion phase - New Supervisors (Years 8-)

As the San Jose Gateway PhD program has grown, the number of supervisors involved has increased. Some of the early participating SJSU supervisors have retired and new supervisors on both sides of the Pacific have had to be trained -- sometimes in the supervision process generally and always in the specific approaches of this program which spans two academic cultures. Given the retirements of experienced SJSU supervisors, new SJSU supervisors were recruited and needed to be trained and mentored. This meant that the mentoring load for the QUT supervisors was greater than anticipated in this phase. At the same time, shifts in the QUT staffing profile meant that a different group of supervisors, both experienced and early career, are taking on principal and associate supervision roles. Academic management of the program has thus shifted to enabling a much larger group in the supervision process.

Widening of the supervision team has also been driven by unexpectedly large enrolments in recent years. The 2014 cohort comprised nine students, a further two commenced in 2015, and it is anticipated that four will join the group in 2016. In this new phase, one of the SJSU Professors, who graduated two QUT students, was invited to an Adjunct Professor role at QUT. This role will allow him to act as a Principal supervisor for SJSU students, and is also recognition of the mentoring that he is able to provide to colleagues.

Student and Faculty Perspectives

The section describes student and faculty perspectives about the San Jose Gateway PhD program summarized from a comprehensive program review of program. The review was undertaken to identify positive student outcomes and those program components intended to lead to them, as well as to assess the degree to which the program goals were being met. It was primarily reflective with an aim to maximize student learning, create programmatic efficiencies where appropriate, and to develop new program content as necessary.

Data were collected from student and faculty evaluations of residential programs; graduating students' exit survey responses; notes from faculty meetings that took place between 2008 and 2013; and interviews with current and former students', supervisors' and non-supervisory faculty's about their perceptions, experiences and expectations. Generally, student and faculty feedback has consistently featured common themes, both in terms of the characteristics of the program contributing to its success, and the areas upon which additional focus should be placed. The degree to which the various

stakeholder groups express satisfaction varies but several issues are salient for all program participants.

1. The greatest satisfaction with the program is derived from the sense of community developed among students and faculty members as a whole. Students and faculty alike find those program components contributing to group-based learning, mentorship, modelling and participatory learning most fulfilling.
2. Grounded in the QUT approach to doctoral education the program does not involve the same degree of coursework as would be present if the program was based on a north American approach. Concerns still exist by stakeholders about the perceived lack of structured guidance for students in developing skills that help them achieve formal milestones, particularly those related to the gaining thorough knowledge of a wide range of methodologies.
3. The multifaceted concept of socialization into the research community has emerged as an underlying concern for both students and faculty. While some inconsistency appears in a precise definition of the concept as it applies to the program and the individuals involved at any given time, it encompasses notions such as developing confidence as a researcher, transitioning to scholar, and becoming a member of the wider research community.

Overall, students express high levels of satisfaction with many program components, including individual supervision, individual progress and the broad program structure.

I chose this Gateway program based on my options for supervision, the distance model, and the research focus (no courses required). I did consider two other programs in Canada. Both would have required me to relocate.

The flexibility offered by the absence of regularly-scheduled mandatory classes has attracted students to the program and also afforded the opportunity to develop a model of learning based largely on group participation, modelling, and mentorship.

I was employed full time [while I was in the program]. I could not have done this without distance program.

This model has also allowed students to develop and to reinforce the skills needed to learn independently.

The research foci of the program tend to be grounded in industry problems, as students typically are experienced professionals, often senior executives. The strong industry-academic connectivity has become a key feature and strength of the program. Academic output has demonstrably been on strong quality, with student led publications appearing in high impact journals, and students winning prizes for papers. Graduates are also finding themselves in demand, with most having secured new appointment in more senior roles within the library profession (e.g. Library Dean or Director) as well as taking on more research related positions (e.g. university academic appointments).

An interesting tension is arising in regard the best way to design the program to meet the diverse student cohort. While some of the students are undertaking doctoral study with the view to begin a research or academic career, many are undertaking the program for personal development and/or to advance their library and information career, with no intentions to enter

the academy. Different approaches, foci and syllabus may be required for those students wishing to pursue a career in academia, as compared to students wishing to pursue leadership within the professional practice of library and information.

Conclusion

The doctoral education landscape is changing rapidly and these changes are reflected in the San Jose PhD Gateway program. Virtual teams of researchers work together in different parts of the globe. Since the program began in 2008, 28 academics have participated in student supervision (13 from QUT and 15 from SJSU) and 22 are currently active. As of 2016, there are 14 students in the program, and the program has had 9 graduates. Between 2008 and 2016, students – alone or with their supervisors – have written or delivered 121 publications and presentations. The San Jose PhD Gateway program demonstrates how a trans-pacific collaborative model can lead to success in many different ways and at many different levels.

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Appendix A Selected Presentations and Publications 2001-2016

Presentations

2016

- Buchanan, S. (2016, January). Student-driven, independent inquiry and academic motivation. Poster session. Association for Library and Information Science Education, Boston, MA.
- Fraser-Arnott, M. (2016, January). Professional identities of LIS graduates in non-traditional roles. Poster session. Association for Library and Information Science Education, Boston, MA.

2015

- Buchanan, S. (2015, June). The impact of student-driven, independent inquiry on academic motivation. Presented at the 7th International Conference on Qualitative and Quantitative Methods in Libraries, Paris.
- Maybee, C. (2015, April). Preparing today's learners: The role of information literacy in the adoption of innovative pedagogies. Invited presentation at the University of Southern Queensland, Toowoomba, Australia. Available at [http://www.usq.edu.au/learning-teaching/usqsalon/previous/maybee\(link is external\)](http://www.usq.edu.au/learning-teaching/usqsalon/previous/maybee(link%20is%20external))
- Otero-Boisvert, M., Romaniuk, M.J., Stenstrom, C., Fisher, B. & Haycock, K. (2015 January). Transforming LIS Professionals into Self-Confident Leaders. Juried panel. Association for Library and Information Science Education, Chicago, IL.
- Sarraf, N. (2015, March). Smart affective search [Lightening talk]. Presented at the iConference, Newport, California.

2014

- Otero-Boisvert, M. (2014, January). Funding the academic library: An ethnography. Poster session. Association for Library and Information Science Education, Philadelphia, PA.
- Romaniuk, M.J. (2014 January). Developing emerging leaders in the library profession: Program content, self-efficacy and leadership. Poster session. Association for Library and Information Science Education, Philadelphia, PA.

2013

Fraser-Arnott, M. (2013). Opportunities for LIS Graduates: Capitalizing on our Transferable Competencies. Presentation at the Library 2.013 (Virtual Conference). Available at [https://sas.illuminate.com/drtbl?sid=2008350&sid=D.30FFFE C61CCC4C921DDF4647250BB0\(link is external\)](https://sas.illuminate.com/drtbl?sid=2008350&sid=D.30FFFE C61CCC4C921DDF4647250BB0(link is external))

Harlan, M.A. (2013). Digital Media and Learning Conference. Panel Convener: Generation Connect: Evolution of a Youth-Center Network in San Francisco.

Tucker, V.M. (2013, November). The expert searcher and threshold concepts. Invited speaker, San Jose State University Colloquium Series. Available from: <http://slisweb.sjsu.edu/about-slis/colloquia/Fall%202013>

Journal Articles**2016**

Smeaton, K.; Maybee, C.; Bruce, C.S.; & Hughes, H.E. (2016). Crossing literacy and informed learning boundaries with Manga. *Access*, 30 (1), 12-26.

2015

Fraser-Arnott, M. (2015). Librarians outside of libraries: The experiences of library and information science (LIS) graduates working outside of libraries. *LIBRI* 65(4), 301.

Maybee, C., Carlson, J., Slebodnik, M., Chapman, B. (2015). 'It's in the syllabus': Identifying information literacy and data information literacy opportunities using a grounded theory approach. *The Journal of Academic Librarianship*, 41 (4), 369-376.

Stenstrom, C., Haycock, K. (2015). The role of interpersonal influence in budget decision making: The Canadian public library experience. *Administration & Society* 47(8), 983-1014.

Zou, H., Chen, H., & Dey, S. (2015). A quantitative analysis of Pinterest: Understanding library user engagement strategies for effective social media use. *Journal of Information Technology Management*, 26(3), 21-32.

2014

Harlan, M.A., Bruce, C., & Lupton, M. (2014). Creating and sharing: teens' information practices in digital communities. *Information Research* 19(1).

Stenstrom, C. & Haycock, K. (2014). Influence and increased funding in Canadian public libraries. *Library Quarterly* 84(1), 49-68.

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Designing an innovative system to evaluate a postgraduate supervision support and development framework

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Abstract

The supervision of a doctoral student engages the supervisor/s and the candidate in a professional learning and teaching relationship, described by some as the pedagogy of supervision (Grant, 2005; Nulty, Kiley, & Meyer, 2009). In the past few decades, many universities have developed 'supervisor training' programs and other innovations to support supervisors. These programs are designed to cultivate the necessary knowledge and skills to support academic and research staff to supervise postgraduate student(s) (Carton & Kelly, 2014; Carton, O'Farrell, & Kelly, 2013; Luca et al., 2013). As part of a project that was funded by an Office for Learning and Teaching (OLT) Extension Grant, such a Framework was recently designed and implemented at Avondale College of Higher Education, a small higher education institution in the early phases of postgraduate program development (Petrie et al., 2015). The effectiveness of such initiatives is often difficult to measure in small institutions such as Avondale; the relatively small number of students and supervisors does not always provide the breadth of feedback necessary to evaluate success using traditionally employed evaluation methods. This paper reports on the innovative evaluation system developed as part of this project, using the pedagogy of supervision as a frame of reference to evaluate the Framework. This evaluation process is being undertaken using a design-based research methodology (Anderson & Shattuck, 2012) which has guided the construction of evaluation criteria and metrics to evaluate the effectiveness of Avondale's Research Training Support Framework. The developed evaluation method and its initial findings will be reported in this paper.

Keywords

pedagogy of supervision; postgraduate supervision; evaluation; higher education; design-based research

Introduction

The Framework reported in this paper, the Research Support Training Framework at Avondale College of Higher Education, is an institutional framework that was designed to support and improve the supervision of honours and higher degree research students (Petrie et al., 2015). The need for such an institutional Framework has also been widely acknowledged and advocated by other higher education institutions (for example, Carton & Kelly, 2014; Carton et al., 2013; Grant, 2005, 2010; Kelly et al., 2012; Luca et al., 2013). However, systematic and tailored methods to evaluate such Frameworks are not as prevalent as the Frameworks themselves. Accordingly, this paper reports on the development of an innovative evaluation system, based on the pedagogy of supervision as a frame of reference and informed by the principles of design-based research methodology

(Anderson & Shattuck, 2012). This methodology guided the construction of evaluation criteria and metrics to facilitate the evaluation of the effectiveness of Avondale's Research Training Support Framework. The evaluation system is currently being used to evaluate the recently-developed Research Support Training Framework and this paper outlines how the evaluation system was developed, alongside some initial findings.

Background

Over the past few years quality assurance in higher education has become an increasing priority, not only within Australia but internationally (Harvey & Williams, 2010). This has led stakeholders to search for policy and practice that are research-informed and demonstrate effective and efficient outcomes (Leiber, Stensaker, & Harvey, 2015). Within this context postgraduate research is seen as a 'critical sub-system and core productive function of the university' (Houston, 2015, p. 1), forming a key intersecting point between its teaching and research activities.

It is recognised, however, that the dynamically changing environment of higher education necessitates a careful look at the way in which research supervision is conducted to ensure it meets institutional goals (Zhao, 2003). Houston (2015) suggests that the quality assurance debate may lead to rethinking postgraduate research by incorporating a systemic review, in which the various systems and processes that determine how activities are undertaken within an institution are carefully examined (Flood, 1999). Increasingly, best research supervision practice is seen to require formal structures for developing supervisory skills amongst academic staff (Kelly et al., 2012). It is no longer viewed as sufficient for an organisation to consist of a few high-performing stars in a context within which the overall ensemble performs poorly (Little, 2015).

Integral to this process has been the development of what is referred to within literature as the pedagogy of research supervision (Grant, 2005; Nulty et al., 2009). It is recognised that the supervisory role is complex with a wide range of skills and strategies being required in order to provide effective support for the student. The ability to create a culture where transformational learning and a dynamic trusting relationship flourishes, is crucial to the success of the supervisory relationship (Severinsson, 2015). Within Australia the need for professionalization of research supervision has been articulated, with the recommendation that this should include ongoing regular professional development for all supervising staff (McGagh et al., 2016). Institutions may incorrectly assume that supervisors who have many years of experience do not require ongoing training (Pearson & Brew, 2002). As argued by McGagh et al. (2016, p. 88) 'inconsistent and sometimes absent training may be one of the causes of supervisor performance issues'.

In response to these identified needs, an increasing number of universities have developed training programs to support supervisors (and potential supervisors) in their ongoing development (McGagh et al., 2016). Luca et al. (2013) for example, responded to needs of experienced supervisors by designing a research supervisor toolkit. This toolkit provided resources for use through the entire supervision process, from supervisor selection to thesis completion. Carton and her colleagues (Carton & Kelly, 2014; Carton et al., 2013; Kelly et

al., 2012) addressed the issue from an institutional perspective, developing a framework with an accompanying set of resources designed for supporting supervisors and their students. The institution featured in this paper has likewise designed and implemented an institutional framework with accompanying toolkit to support and improve the supervision of higher degree by research students (Petrie et al., 2015).

In order to provide quality assurance for the supervisory process, a number of institutions within Australia have developed supervisor registration or accreditation schemes. Examples of these include the University of Adelaide Supervisor Classification and Reporting System (University of Adelaide, 2015), and the supervisor and accreditation scheme developed by Queensland University of Technology (Faculty of Education Queensland University of Technology, 2015). There remains, however, a gap in assessing the effectiveness of supervision structures. It appears that the evaluation of supervisory frameworks is not as evident as the frameworks themselves. McGagh et al. (2016, p. 89) concur that within Australia 'the research training system currently has no consistent method for identifying excellent research training'. This project aims to develop an innovative system with which to evaluate the effectiveness of an institution's postgraduate supervision support and development framework. The underlying philosophy in designing the original framework was that of situational responsiveness (Patton, 2012, 2015) ensuring that stakeholders were considered and consulted at each step. This philosophy is likewise considered essential in driving the evaluation of the framework. As noted by Little (2015), staff within small undergraduate colleges tend to have a different culture from those within large research universities. Despite the Framework being tailored to the institution's specific context, the necessity of evaluation remains.

The research problem and context

A need was identified by the administration and the supervisory staff at Avondale College of Higher Education to develop a program that would support the professional development of HDR supervisors while also providing support for Honours and HDR candidates. The institution required a systematic framework to support research supervision that incorporated the policies it already had in place. The challenge for the College leaders was to develop a bespoke framework that suited a small supervisor population. These contextual factors informed the way in which the College's Research Training Support Framework was developed and launched (<http://www.avondale.edu.au/research-training/>).

The College needed to create a framework that was specific to its needs and developed through consultation with the stakeholders. Stakeholders included current and potential HDR students, current and potential postgraduate supervisors in the Faculty of Arts, Nursing and Theology and the Faculty of Education, Business and Science as well as the senior administration of the College. The College officially launched the framework in the first semester of 2016 and it was warmly received. After the framework became operational, an appropriate evaluation process was needed to assess its effectiveness and guide its future development which sought critical feedback from staff and students.

The evaluation of the project will ensure the continued participatory input to the development and improvement of

Avondale's institutional framework for the support of HDR supervisors and HDR students. Based on the assumption that the supervision of HDR students is a pedagogical experience (Golde, 2010; Grant, 2010; Walker, 2010), the institutional framework focuses on how HDR supervisors can facilitate their students' learning to become researchers. Because many of the institution's HDR students and supervisors operate across on-campus and online contexts, the supervision support system was designed on a blended learning platform.

Avondale's context is fairly common in the Australian educational landscape. The College has many part-time and online students from many varied cultural backgrounds. The effectiveness of such a framework is often difficult to measure in a small institution such as Avondale because the relatively small number of students and supervisors does not always provide the breadth of feedback necessary to evaluate success using traditionally employed evaluation methods. While other universities have developed such systems they are not as yet applicable to Avondale for a range of reasons that have been articulated in the aforementioned comments.

Development of the Framework

Avondale College of Higher Education has approximately 56 candidates enrolled in undergraduate honours degrees and postgraduate research degrees at the Masters and PhD level, and the number of enrolled students is growing. Academic staff at the College who supervise these candidates range from novice through to experienced postgraduate supervisors. To ensure the ongoing capacity of the institution to cater for expanding enrolment of postgraduate students and the growing demand for postgraduate supervision, a Framework was required that facilitated the learning of students studying research degrees and the staff who supervise them. Research conducted at the institution (Petrie et al., 2015) revealed that students and staff alike required activities and resources that enabled them to develop their research knowledge and skills. Additionally, academic staff required professional development in the processes associated with effective postgraduate supervision. Whereas the institution had a number of policies in place that guided the selection of supervisors, enrolment, confirmation and submission processes, a comprehensive system that guided students and supervisors through a typical higher degree by research was required. Some of these institutional requirements to support the ongoing research training at the College were also reported in the recent Review of Australia's Research Training System: 'Evidence suggests that there is significant room for improvement across a range of important areas relevant to HDR training' (McGagh et al., 2016). Thus, the first stage of the project reported in this paper established three objectives:

- to develop an institutional framework of support to engage and empower potential and current supervisors of honours and HDR students;
- to implement an institutional framework of support to engage and empower potential and current supervisors of honours and HDR students; and
- to develop and enhance academic staff members' supervision knowledge and skills, leading to an improved student and staff experience,

By drawing on the evaluation methods developed by Patton (2008, 2011, 2015), a utilisation-focused evaluation research approach was developed and implemented to design an institutional system to cater for the institution's needs, as well as the needs of postgraduate students and their supervisors. This approach ensured that users of the Framework were able to contribute their ideas to its design and implementation. Through this participatory research approach, a Research Training Support Framework was developed with the funding support of an Extension Grant from the Office for Learning and Teaching (OLT) (Petrie et al., 2015). During this project, the three central stages of the 7-stage Framework were developed with the final four stages scheduled for development in 2017. The Framework is now available online (see Figure 1) and under evaluation. The Getting Started stage provides students with resources about setting expectations and roles, supervisor selection, candidate capacity and the research process. The Proposal and Confirmation stage guides staff and students through preparing for confirmation, the confirmation event and issues related to ethics. The Research and Writing stage provides guidance on conducting research, writing and publication.

Currently, the Framework is being used increasingly by the academic staff and postgraduate students at the institution, with a growing number of external users accessing the site from within Australia and from other countries. For example, as part of the Framework, supervising staff attend on-campus workshops and online tutorials focused on getting started in supervision and best practice in supervision. Postgraduate students are accessing the online Framework resources for guidance on how to conduct literature reviews and how to communicate with their supervisors. More detail about the Framework's use is included in the Preliminary findings section later in this paper. The project recently entered its second stage during which the Framework is being evaluated; the views of various stakeholders (users of the system) are being sought and integrated the Framework's future iterations. The second stage of the study is described in the following section, Research methodology: Evaluation system.

Research methodology: Evaluation system

The aim of this second stage of the project was to evaluate the use of Avondale's Research Support Training Framework for supervisors of honours, Masters and PhD candidates at Avondale.

A design-based research methodology (Anderson & Shattuck, 2012) has guided the construction of evaluation criteria and metrics to evaluate the effectiveness of the Framework. Wang and Hannafin (2005) define design-based research (DBR) as 'a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development and implementation, based on collaboration among researchers and practitioners in real-world settings, and leading to contextually-sensitive design principles and theories' (pp. 6-7). Anderson and Shattuck (2012), two contemporary pioneers in promoting DBR, suggest that an authentic DBR framework is characterised by eight key features. First, they argue that DBR is 'situated in a real educational context', to address real problems, which need to be tackled in the real environment (Kennedy-Clark, 2013). Second, DBR focuses on the design and testing of a significant intervention, where intervention in this case is used to describe an educational program that introduces a systematic change in the teaching-learning environment. Third, mixed method designs are typically employed by combining quantitative and qualitative approaches to collect data needed to answer research questions. The final decision about choosing the type of method is driven by the research question and the kind of data that can meet the refinement needs of the intervention (Jen, Moon, & Samarapungavan, 2015). Furthermore, DBR involves multiple iterations of an intervention, which is systematically studied multiple times until it becomes an effective solution to the learning problem (Jen et al., 2015). DBR comprises of a 'collaborative partnership between researchers and practitioners' throughout the investigation. Practitioners are treated as research partners because of the knowledge and expertise they bring to the study (Barab & Squire, 2004).

Further, DBR is a unique package, which can be distinguished from other design approaches such as action research, experimental and formative evaluation. Finally, 'practical impact on practice' is considered an integral part of the research process. As such, DBR was considered the most appropriate method to evaluate the effectiveness the Framework where College, academic staff and HDR students could see direct benefits to them of the research through its practical and scientific outcomes. The evaluation stage of this research project was guided by two research questions:



Figure 1: Header of Avondale's Research Training Support Framework site <http://www.avondale.edu.au/research-training/>

1. How is the framework being used?
2. Who is using the framework?

The methodological approach taken to address these research questions involves five phases. These phases will include the identification of participants; refining the research instruments (including trialling the data gathering instruments); data collection, data analysis and subsequent framework modification.

Data collection includes the using of online surveys, evaluations of on-campus workshops, feedback and evaluation of online webinars and tutorials and Google analytics from the Framework site. Analytics will include page hits, how pages are being accessed and the geographical location of those accessing the framework. Feedback is also being gathered on an ongoing basis through Avondale's Centre for Advancement of the Scholarship of Teaching and Learning (CASTL) which is partly responsible for implementing and evaluating the Framework.

The data analysis methods used will vary, given the breadth and scope of the data collected. Both quantitative and qualitative data will be collected. Analysis will focus on answering key questions, including which groups are or are not using the Framework; areas of frequent and infrequent use; the usefulness of the Framework; and the strengths and limitations of the Framework contents and activities.

Preliminary findings

The findings reported here are of the first few months of activity and as such provide just a snapshot of the potential of the initiative as well as providing some insight into the potential success of the methodology employed in the study. These are provided to better understand the effectiveness of the framework to support research supervisors and their research students in a small institution. This has many advantages over a large institution where it is very difficult to gather all supervision staff together at the one time and relate new initiatives. Conversely, having staff together and communicating initiatives to them does not necessarily provide assurance that there will be take up of the initiatives or compliance.

One of the methods we will use to better understand the level of engagement with and utilisation of the Framework will be the use of the online component of the Framework. We are utilising

Google analytics for the purpose of gaining insight to the use framework and the content of significance on the Framework site, see Figure 2 below. Early findings suggest there was a slow level of engagement with the site after it was initially launched and a total drop off of usage during the summer break. From the start of the year, however, there was a gradual rise in the level of engagement, coinciding with a staff development week in early February. The topic of the supervision of research students was one of the topics focussed on during the week. It is evident that the engagement with the site grew significantly during this week, but continued to grow throughout the following month, before dropping away once the academic semester began. There are potentially two reasons for this. First the impact of raising the profile of the Framework and the importance of its content during the staff development sessions raised the profile and usage of the material. Second, staff utilised the site and its material as they began the years' work with their research students. Both of these proposed reasons for accessing are valid, but it is interesting to see that there was an impact on site utilisation during and after the staff development workshops were presented. Potentially, this showed that the use of blended presentation of the materials, using both face to face and online resources, evokes a higher level of engagement with academic staff.

The second part of the rationale for the use of Google analytics is to better understand the priority areas for staff, to enhance and tailor support accordingly. Figure 3 demonstrates the most frequently accessed pages by staff during the brief monitoring period which reflected the importance of quality publishing. The most visited pages, indicating an acknowledgement of the staff raised awareness of the importance of publishing for both themselves and their research students, aligns with the priorities of the College as it transitions from a teaching only institution to a teaching/research institution.

Other sites visited frequently were also aligned with priorities of the institution as well as issues characteristic of the student population of the College, supervising cross-cultural students. Again the initial data appears to indicate that the staff utilisation of the site is aligning with the priorities of the institution and the activities associated with the time of the year, this was done in the early part of the academic year so consequently enrolment was important. This data indicates the importance of the framework in supporting College staff in their role of supervision.

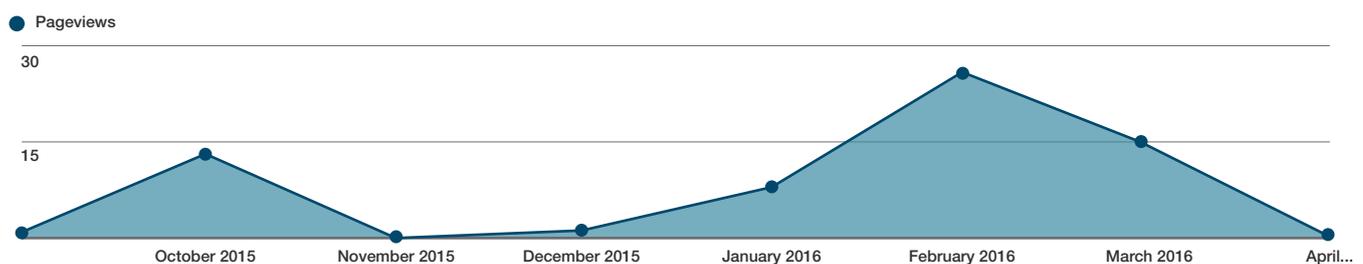


Figure 2: Staff Accessing Framework Site

| Page | Event Label | Total Events |
|---|--|--|
| | | 121 % of Total: 0.38% (31,996) |
| 1. /Maintain/Research/Training-Factsheets/ Publishing-opportunities.pdf | Publishing opportunities durign candidature | 29 (23.97%) |
| 2. /Maintain/Research/Training-Factsheets/ Avondale-policies-about-supervision-for-staff.pdf | Avondale policies about supervising HDR students | 18 (14.88%) |
| 3. /Maintain/Research/Training-Factsheets/HDR- student-enrolment-procedures.pdf | Flowchart of application, admission and enrolment | 13 (10.74%) |
| 4. /Maintain/Research/Training-Factsheets/ Supervising-cross-cultural-HDR-students-for- staff.pdf | Supervising cross cultural HDR students | 13 (10.74%) |
| 5. /Maintain/Research/Training-Factsheets/ Readings-about-HDR-supervision.pdf | Readings about Supervising HDR students | 11 (9.09%) |
| 6. /Maintain/Research/Training-Factsheets/ Dealing-with-feedback.pdf | Dealing with feedback from supervisors about chapter and thesis drafts | 9 (7.44%) |
| 7. /Maintain/Research/Training-Factsheets/ External-resources-for-HDR-students.pdf | External resources for HDR students | 8 (6.61%) |
| 8. /Maintain/Research/Training-Factsheets/ Supervising-HDR-Distance-Students.pdf | Supervising Distance HDR Students | 8 (6.61%) |
| 9. /Maintain/Research/Training-Factsheets/ Supervising-part-time-HDR-students.pdf | Supervising part-time HDR Students | 6 (4.96%) |

Figure 3: Most Frequently Visited Sites by Staff

| | | | |
|---|---------------------|------------------------|----------------|
| 19. /research/training | Mackay | 28. /research/training | Pune |
| 20. /research/training | Mildura | 29. /research/training | Amritsar |
| 21. /research/training | Sao Jose dos Campos | 30. /research/training | Quezon City |
| 22. /research/training | Burg bei Magdeburg | 31. /research/training | Wroclaw |
| 23. /research/training | Lagos | 32. /research/training | Birmingham |
| 24. /research/training | Cape Town | 33. /research/training | Grand Rapids |
| 25. /research/training/getting-started/ | Melbourne | 34. /research/training | Mason |
| 26. /research/training/research-writing | Newcastle | 35. /research/training | Mount Pleasant |
| 27. /research/training | Saskatoon | 36. /research/training | Southfield |

Figure 4: Locations from where the Framework site is visited

As emphasised in this paper, the College is small, hence the need for a Framework that would suit an institution of this size, so the numbers of staff engaging with the material is not large by large institution standards but is representatively high for the number of research supervisors and research students at the College the numbers are significant for the College.

To conclude, the utilisation of Google analytics provided an interesting insight to the diversity of access to the site. Figure 4 illustrates some of the locations from which the site was accessed in the early months of its establishment. The diversity of locations from which access to the site was made indicates that the strategies and materials on the site are of interest to people. It was an interesting sideline to the focus of the study but it does indicate relevance of the project.

Conclusion

High quality research capability does not always equate to high quality research supervision. The implications of facilitating the provision of considered support and development for research supervisors in higher education institutions is gaining momentum, as recognition grows for the impact of supervisor-student relationships on successful outcomes. Furthermore, the institutional measurements of success in research which feed the metrics used for determining university rankings (such as completion rates, throughput, funding awards and publication rates, to name a few), firmly place a responsibility and expectation on successful research supervision. Ongoing and sustainable supervisor professional development is a resource-intensive pursuit, which has often been underrepresented in institutions primarily for financial or strategic priority purposes. However, without adequate support, supervision can fail very rapidly (National Tertiary Education Union, 2015, as cited in McGagh et al., 2016, p. 89).

Avondale College of Higher Education has strategically prioritised the development of a flexible and bespoke HDR Supervision Framework. In doing so, the educational experience of honours and HDR students, as well as supervisors, has been centrally placed in a research capacity-building initiative, which broadens the traditional suite of metrics used for measuring success, while also ultimately supporting completion rates, throughput and student satisfaction. This Framework has facilitated both qualitative and quantitative analysis of student and staff engagement. By involving key internal stakeholders, addressing local requirements and building on international models of supervisor development, the initial three objectives of this project have been successfully met.

Key findings in relation to the identification of staff needs and the provision of academic services and supports will strengthen the value of the Framework going forward, as content and delivery modes are adapted. The identification of students' perceptions of good supervisory characteristics will inform the Avondale teaching community of the local student community's needs. This is a feature which is highly relevant to the College's educational ethos.

This project has also begun to address the complex issue of evaluation of supervisory supports. As the Framework builds on preliminary findings, a specific and more tailored approach to support provision can be developed with time. Emilsson and Johnsson (2007) have cautioned that changes in supervisory

practice do not happen quickly but are developed over time and a quick-fix, pre-supervision course is not sufficient for new supervisors, but rather they need some ongoing support mechanisms that they can return to over time (Luca et al., 2013, pp. 10-11). With time-specific evaluation of staff engagement with the framework, the benefits for the institution's supervisory strategy will grow incrementally.

By using qualitative and quantitative analysis to determine usage and value of the framework at stage-specific time points, with identification of staff and student engagement as well as specific analysis of preferred and least preferred content hits, the optimal areas where resources should be placed are identified. The most significant staff engagement was seen in the area of support for publishing opportunities during candidature, which is directly aligned with the College's strategic objectives. Avondale's policies and procedures with respect to supervising HDR students as well as application, admission and enrolment were the second most frequently targeted by staff, with cross-cultural HDR supervision following closely. This data facilitates Avondale's investment in these key areas of knowledge requirement and reflect the ever growing distance learning environment for HDR staff and students. For institutions struggling with budgetary allocations, this form of intelligence gathering is invaluable.

Avondale College of Higher Education has, over a short period of time, achieved the objectives of this project. In addition, an evaluation mechanism for the Framework is successfully underway. This Framework is a model for those institutions that lack a consistent approach to supervisor supports for strategic, financial or human resource reasons, irrespective of size, as this is a flexible and yet bespoke endeavour. In Australia (and globally) the research training system currently has no consistent method for identifying excellent research training – a finding of the recent Review of Australia's Research Training System (McGagh et al., 2016, p. 88), let alone identification of excellent training programs and supports. This project has ambitiously approached the latter and produced a model which is viable and adaptable for many institutions. The challenge of making explicit, the skills, attributes and pedagogy of research supervision with a view to supporting their development is a challenge which all higher education institutions currently face.

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Creative Interchange during the pre-existing phase of the Postgraduate Forum for Southern Africa

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Abstract

In October 2015, almost 80% of South African public universities participated in the inaugural meeting of an interest group for postgraduate support. The discovery of mutual and unique perspectives and practices, the appreciation of the diversity of the participants, the integration of the diversity to expand knowledge and capacity, and the utilisation of the expanded capacity to transform ideas into action and enable change contributed to the constitutional and strategic attributes of the Postgraduate Forum for Southern Africa (PGFSA). This first contribution of the PGFSA to the international body of knowledge reflects on the creative interchange of views, ideas and understanding between the participants during the pre-existing phase. Through authentic and creative interacting, appreciative understanding and co-expanding capacity, the PGFSA was formally established. The purpose of this paper is to document and theorise the process of establishing the PGFSA through the unintentional use of Creative Interchange perspectives. This paper shares the process of how an interest group was established through the cooperation that – in hindsight – had the elements of Creative Interchange. The discovery of mutual and unique perspectives and practices, the appreciation of the diversity of the participants, the integration of the diversity to expand knowledge and capacity, and the utilisation of the expanded capacity to transform ideas into action and enable change contributed to the PGFSA's authentic conception.

Keywords

South Africa; postgraduate support; postgraduate education; doctoral support

Introduction

This paper documents the process of establishing the Postgraduate Forum for Southern Africa (PGFSA) as it happened through the unintentional use of Creative Interchange perspectives. During the review of recordings made during stakeholder meetings on the establishment of an interest group for professionals and academics in the field of postgraduate support, the discovery of mutual and unique perspectives and practices, the appreciation of the diversity of the participants, the integration of the diversity to expand knowledge and capacity, and the utilisation of the expanded capacity to transform ideas into action and enable change contributed as attributes of Creative Interchange emerged. A basic premise of this paper is the perspective that effective support for postgraduate support units (schools, centres and offices) best develops organically once given the opportunity, and not as an initiative of the government. The Creative Interchange theoretical perspective underpins the process of establishing the PGFSA.

'The problem of the beginning is, in fact, the problem of the end. For it is with respect to an end that a beginning is defined'

(Gadamer 1960/1989:472). It was not any different with the pre-existence of the PGFSA. The end was already envisioned as a functional interest group that supports the postgraduate supporters. And with respect to the end, the beginning was indeed defined. The action plan was simply to 'begin at the beginning, and go on till you come to the end' (Lewis 1969/1865) of establishing the beginning.

Background

Reminiscent of universities all over the globe, South African universities are experiencing increasing pressure to grow their postgraduate output and to improve the quality of their graduates through more comprehensive postgraduate support and research development. South Africa's National Development Plan foresees the tripling of the number of doctoral graduates from less than 1500 in 2011, to 5000 in 2030, and without increasing the number of supervisors – of whom it is expected to produce income-generating research outputs, as well as teach undergraduate modules. Average South African academics do not hold doctorates; they teach, supervise and research full-time, while they study part-time.

The establishment of institutional supports structures for postgraduate students plays a pivotal role in the strategies of higher education institutions (HEIs) to increase the number of graduates they produce. In the USA, the UK and Australia graduate schools have become important role players in the postgraduate research arena, and so are the bodies that support the institutional postgraduate support units.

The Australian Council of Graduate Research (ACGR) was established in 1995 as a non-for-profit forum. ACGR (formerly the DDOGS or the Council of Deans and Directors of Graduate Studies) aims 'to share experience, develop policy, prepare submissions to the government and generally cooperate for improvement of research education across the country. It has proved to be an extraordinary collegial body and is nationally recognised and consulted for its special expertise in research training matters' (Stuart, Powal and Green 2007). The ACGR developed various documents that influenced the postgraduate sector, including research reports and frameworks, submissions to policy makers, and practice-sharing guidelines (ACGR 2015). Apart from the intrinsic value that the ACGR added to Australia, the various documents it published influenced the postgraduate sector worldwide. These included research reports and frameworks, policy-influencing submissions, and practice-sharing guidelines (ACGR 2015).

The UK's Council of Graduate Education (UKCGE) was established in 1994 as an independent representative body under the founding-chairship of Professor Robert Burgess. The UKCGE aims to champion the interests of graduate education in the UK through its authoritative voice by providing high quality leadership and support to its members to promote a strong and sustainable postgraduate education sector. (UKCGE 2013). The UKCGE communicates valuable information and research, facilitates networking, provides an influential lobbying function, and produces relevant publications.

The USA's Council of Graduate Schools (CGS) was established in 1961 as a participating group (WHSC 1969). The CGS (formerly the Council of Graduate Schools in the United States) is the national voice for the graduate dean community in the USA and,

to a lesser degree, Canada. The CGS's core activities are best practice initiatives - benchmarking, public policy resourcing and global engagement (<http://cgsnet.org/about-cgs>).

Soon after the ACGR and UKCGE were established, researchers Bartelse and Goedegebuure (1999:236) found that the compulsory and much-needed support in graduate education failed to become a stable and meaningful practice in Europe, although adopted versions evolved and survived here and there. The most obvious difference between the less successful support bodies seems to be the status attached to the national bodies. The European bodies were part of a top-down approach where government officials and/or politicians of national governments made the decisions. In contrast, the independently-developed interest groups inevitably followed a bottom-up approach, as was the case in Australia, the UK and the USA, where the support bodies were not mandated as part of a national higher educational system. The bottom-up approach begins simplistically as a type of information processing based on incoming data from the participants working together voluntarily at grassroots level. The joint involvement leads to the organisation, identification and interpretation of the information - in order to represent and understand the postgraduate support environment (Kezar 2012).

Bottom-up or organic development may result in a micromanaged and isolated entity that provides in the obvious needs of the local context, but fails to provide in a global context (Altbach, Gumpert and Berdahl 2011). However, in this case, the mobility of the participants and the input of international experts limit this threat.

In South Africa, the establishment of an independent interest group for the postgraduate community that facilitates networking, policy influencing, quality assurance and benchmarking, global engagement and exposure to best practice was long overdue. Slowly but surely South African HEIs are following the international trend of establishing postgraduate support units and/or the appointment of directors of postgraduate studies. During the past decade, many South African universities established postgraduate support units to address the needs of postgraduate students and to identify and develop future generation researchers. These units differ significantly in their functioning and strategic focus. In certain instances, postgraduate support units serve a purely administrative role focusing on the administration of postgraduate business processes, such as the registration and funding of postgraduate students, while other support units are responsible for research capacity development programmes offered to supplement discipline-specific research training and to enhance the transferable skills of students. A number of postgraduate support units offer more comprehensive services to postgraduate students, emerging researchers and supervisors with a strong advocacy role for the interests of postgraduate students, promoting a positive postgraduate experience through regular communication with postgraduate students, and the provision of skills training and research-related resources. A few support units are embedded in interdisciplinary academic programmes and faculties where they play a crucial role in the academic planning, postgraduate support processes and quality assurance of these programmes.

The pressure to expand the postgraduate cohort at universities necessitates a strategic focus on the role of postgraduate support units and how they can play a role in developing good practice frameworks for postgraduate education in South Africa. International examples of councils of graduate schools (the US Council of Graduate Schools; the UK Council of Graduate Education; DDOGS Australia) testify to the important contribution of these governing bodies in the promotion of graduate education in the respective countries through engagement with academic and government stakeholders, the benchmarking of graduate education processes, the development of good practice initiatives that address the common challenges of graduate schools, and advocacy for graduate education. Even though postgraduate schools and centres in South Africa are relatively new when compared to those in the aforementioned countries, there was a need for a body that could promote and support postgraduate students' interests, and where experts could share their experiences.

Theoretical Perspective

Creative Interchange is derived from Gadamer's hermeneutical interpretation that unfolds the nature of the individual's understanding of his/her experience. This perspective supplies in the demand for a concept that scientifically validates new knowledge and dynamically challenges the empirical evidence provided for conclusions about the processes that operate within human interaction – including unavoidable prejudices. Creative Interchange is an operational aspect that signifies a dynamic, mutual-enhancing communication whereby each participant arrives at the in-depth appreciation of the other's viewpoint, while maintaining the constructive values (David 1985:104):

Notions of creativity in one form or another have long allured and enticed the human mind to explore its own capabilities and apply itself to conceiving novel patterns of reality more powerful and workable than previous patterns, by which to establish continuously successful negotiations with the total.

Henry Nelson Wieman (1884–1975) identified Creative Interchange as the fundamental process in which individuals and their institutions are able to create, maintain, further and amend their value perspectives through human experience. Wieman further described creative interchange in psychological, sociological, historical and institutional contexts as subject inquiry and the experimental test of consequences. Wieman applied creative interchange interdisciplinary in the context of rhetoric and literary criticism; creative interchange as a guide for social philosophy; and creative interchange as related to current philosophic trends (Broyer and Minor 2006).

The process of Creative Interchange (CI) meets the scientific requirements to be a naturalistic process within a community of practice (Hepler 1982). The CI-process values the mutual influence, appreciation and organisation of human activities and interests. This description of the CI-process is not only applicable to CI, but it encapsulates the rationale for the establishment of organically-developed interest groups.

Philosopher Archie John Bahm (1982) states that the value of the participation in and the constructive development component of CI is evident in this social process whereby

the full potential can be utilised for capacity development in the interdependence of individuals and institutions. However beneficial the exchange is, the progressive international standardisation of 'competition' through globalisation's interconnectedness and interchange might lead to a decrease in creative intervention, according to philosopher Herbert W. Schneider (David 1982).

The major obstacle of CI is the unjust use of power, and therefore justice, value and morality have major and distinct roles and are preconditions for CI (Leer-Salvesen 1982). Forms of interchange that destruct include deceptive interchange, manipulative interchange, reiterative interchange, illogical interchange and other-directed interchange (Miller 1986.).

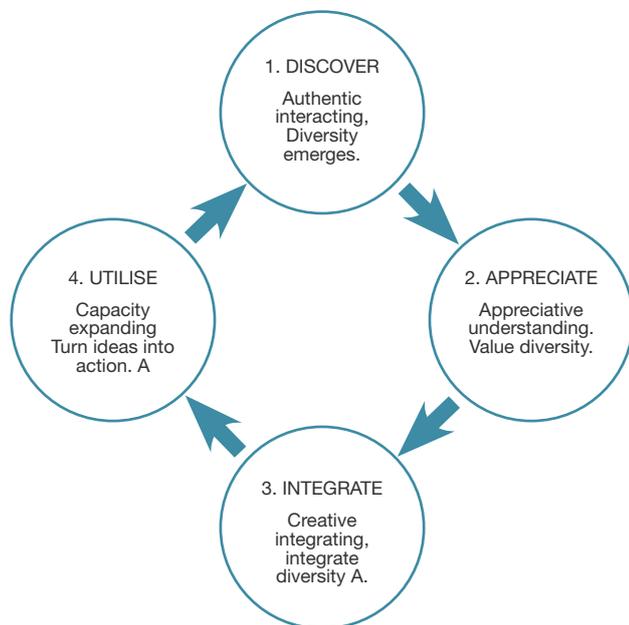


Figure 1: Creative Interchange is a four-fold model to discover, appreciate, integrate and utilise the diversity of ideas and implement creative concepts.

CI is a four-fold process that includes authentic interacting (when diversity emerges), appreciative understanding (when diversity is valued), creative integrating (when diversity is integrated), and capacity expanding (when ideas are transformed into action). The idea of establishing an interest group for postgraduate support developed along this path.

Process

As a result of numerous informal discussions with national and international professionals who were passionate about the support of postgraduate students, combined with her experience as an academic and as the Director of the University of the Free State's Postgraduate School, Dr Henriëtte van den Berg proposed the establishment of the South African Council of Postgraduate Schools during a meeting at the Postgraduate Supervision Conference (PGSC) in Stellenbosch, South Africa, on 27 March 2015. The meeting was attended by national and international academics. A suggestion that an interest group

or forum should forerun the establishment of a council was accepted at this meeting.

A follow-up meeting was held on 12 May during the Association of Commonwealth Universities (ACU) and Southern African Research and Innovation Management Association (SARIMA) conference in Johannesburg and a decision was made to hold the inaugural meeting on 8 and 9 October at the University of the Free State, Bloemfontein. The UFS Postgraduate School hosted this event. The two-day meeting was attended by 22 representatives from 80% of South Africa's public universities and universities of technology. Top-ranking institutions were represented, as well as the lowest-ranking institutions. Rural and urban universities attended; institutions with more than 400 000 students attended, as well as institutions with less than 14 000 students; universities that are almost 200 years old and some that are not yet 20 years old, universities that have more than 65 000 postgraduate students and a university that does not even have 650 postgraduate students.

The spectrum of units that support postgraduate students and supervisors have a variety of prefixes to 'school', 'centre', 'office', or 'unit', including postgraduate, innovation, research, international, postgraduate affairs, teaching and learning, funding and bursary, technology transfer, higher degree and policy development. The units of traditional universities normally serve the masters and doctoral students and supervisors. They also conduct research on postgraduate support. However, often honours and postgraduate diploma students are included, and even final year and international undergraduate students, and supervisors. Some include postdoctoral and research fellows.

The support that these units provide varies significantly. A variety of combinations are found, including capacity development (research and supervision), funding (proposal writing and communication of calls), mobility (staff and students), administration, technical affairs, ethics, quality control (benchmarking and students monitoring), and policy development.

During the inaugural meeting in October 2015 the representatives presented the nature of their schools/ departments/centres, their mandates, and their unique challenges. The gathered information was documented and provided most of the following data. The official government National Register of Private HET Providers provided the rest. The challenges mentioned by the attendees include the consequences of the non/pre-registration status; the lack of official benchmarking of standards and impact measurement; the lack of supervision capacity; the ever-present student funding challenges; the high delayed completion and the drop-out rate of postgraduate students; ineffectual policies; and leadership.

During the inaugural meeting, an executive committee and office-bearers were elected. An executive officer was appointed and tasked with drafting a constitution.

The executive committee's first meeting was held on 23 November at the University of Johannesburg's Postgraduate School. The main purpose of this meeting was to review the draft constitution, including finalising a name and deciding on the type of association and criteria for membership.

During the first three months of 2016, the draft constitution was amended and a law firm fine-tuned it. The communication needs were identified and a communication toolbox was compiled. It included an email account, a Facebook account, a LinkedIn account, and a shared e-drive. In addition, the Forum was branded with a logo and a slogan. All of this happened within 12 months from the initial meeting in Stellenbosch.

Future

The two general meetings for 2016 will be at the SARIMA and ICED/HELTASA conferences, and for 2017 at the SARIMA and PGSC conferences. These joint ventures also fulfil the Forum's aim to collaborate with national bodies with a higher education focus.

A challenge identified by the representatives includes the non/pre-registration status of students during the proposal-writing phase which limits the student's ability to access resources, although it 'extends' the completion time. The lack of strict prescribed benchmarking processes provides the institutions with opportunities to find creative solutions to unique challenges, the need for them exist. Regarding policies, the representatives felt that policy processes and the rationale underlying them were not always clear; the postgraduate support community does not have the opportunity to contribute to or influence decision-making; and that the large numbers of international PG students may compromise South African students and the economy.

'South African postgraduate supervision lacks effective interventions to correct these problems. The small-scale training programmes from various national and international agencies are valuable, but a system-wide mechanism for improving the quality, depth and sophistication of doctoral supervision is required' (Dietz, Jansen and Wadee 2006)

Postgraduate schools/centres are perfectly positioned to receive feedback from both their students and the supervisors, and are able to form an objective view of the current situation of supervision. This vision portrays a supervision force that lacks training, experience and mentoring. Funding challenges include the lack of rational selection processes/criteria, synchronisation between the NRF and the academic calendar, and non-tuition support (accommodation, travel, meals).

The retention of PG students is a challenge for various reasons. Usually, families support undergraduate students emotionally and financially, but the same families often oppose their decision to do postgraduate studies. These families feel that they have already contributed more than they could afford during the students' undergraduate studies and now pressure the students to start earning and take up the financial and practical responsibilities of their households and often extended households. In addition, the industry and business sector often 'buys' PG students with attractive starting salaries, which results in students dropping out immediately, or eventually.

Completion times are also a challenge that impacts universities' resources and subsidies. Research has indicated that full-time student complete their studies in half the time of part-time students. In addition, students in the faculties of humanities, social sciences and education often undertake doctoral studies in the decade before retirement. This is mainly due to financial reasons because these students are often the sole or main breadwinners.

The main managerial and leadership challenge is the ever-widening scope of the mandates, without the realistic increase of resources. The gaps between numerical targets and the capacity/availability of resources are constantly increasing. Additional challenges are the structural problems in South Africa's Postgraduate systems, the lack of scholarship criteria, and the Department of Higher Education and Training's funding processes.

During the inaugural meeting, the first executive committee members under the leadership of chairperson Dr Henriette van den Berg were elected. The Forum serves as a forerunner of the Council and a valuable resource for newly-established postgraduate schools/centres, it provides an opportunity for the staff of postgraduate units to share experiences, and to take the lead in benchmarking postgraduate research education practices.

Appropriating this case study within Creative Interchange

The first phase, authentic interacting, happens when individuals are willing to be open, honest and direct, and willing to communicate with integrity. CI occurs when participants share their unique ideas, knowledge, expertise, perspectives, meanings, values and beliefs, and thereby generate diversity. Authentic interacting happens when individuals are 'sharing with the integrity to inform and listen with humility and to understand and learn' (Lischalk 2002:4).

Conclusion

At many higher education institutions, postgraduate units might begin to experience that although these units' resources are limited and that they constantly tread into the unexplored, they are not isolated. The successful postgraduate schools/centres are continuously (re)building, (re)focusing and (re)calibrating. The recently established PGFSA's Creative Interchange approach - authentic interacting (when diversity emerges), appreciative understanding (when diversity is valued), creative integrating (when diversity is integrated), and capacity expanding (when ideas are transformed into action) - contributes to the fit between the policy and the existing postgraduate context, and addresses the question whether the innovation satisfies the needs in the sector.

The first phase of CI, authentic interacting happened when individuals were willing to be open, honest and direct, and willing to communicate with integrity.

The second phase, appreciative understanding, happened when the participants appreciated others' unique ideas, knowledge, expertise, perspectives, meanings, values and beliefs as they shared and thereby generated diversity.

The third phase, creative integrating of diversity, happened when participants identified with each other's challenges and innovatively co-created insights through the integration of diverse discernments.

The final phase, capacity expanding, happened when the participants spontaneously started discussions via the Forum's temporary email address after the October meeting:

Thembinkosi Mabila, from the University of Limpopo, realised that the Forum members are experts that could add value to his process of revising his HEI's policy on Research Output Incentives. With hours he received copies of policies and valuable feedback from representatives from other institutions.

The representatives also replied promptly and in detail when Peter Meissner from the University of Cape Town need to know what the other HEIs requirements were regarding submitting a plagiarism report (Turnitin or equivalent) with a dissertation, or thesis.

The spontaneous authentic interacting that developed among the representatives assisted these two colleagues to draft informed policies. In addition, the collection of information was archived in the Forums shared online resources centre. The complementary approach, rather than a competitive approach, that developed during the October meeting is a true manifestation of CI.

CI is a slow process. Participative and bottom-up processes opt for increased participation and invite input and feedback that makes the process complex and continually disrupts the orderliness of the process. However, the measure in which interested individuals become participants and then take ownership is evidence that this approach is establishing a solid foundation for an interest group that will soon have the representation and authority to develop into a more formal body.

The documentation of the establishment and development of the Postgraduate Forum for Southern Africa is an ongoing process, especially in the ever-changing landscape of postgraduate support and its challenges.

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Doctoral Supervision as a Professional Practice?

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Abstract

Contemporary trends in science policy and social theory challenge the concept of doctoral supervision as 'professional practice'. The concept compares supervision with the work of other professionals regarding a specific working alliance. Supervisors and novices engage in a relationship to create and solve an intellectual crisis. The dynamics of the crisis, paradoxes of the situation and technical uncertainties of non-standardised problem solving are typical features of all professional practices. However, worldwide trends in doctoral education such as the improvement of completion rates, the creation of formal organisations and programs as well as the overall 'projectification' of the Ph.D. process tend to ignore the unpredictability of doctoral research and supervision. In consequence, social theory discusses trends towards increasing formal control, disciplinary differentiation and particularities in doctoral supervision as an ongoing 'de-professionalisation' of a shared professional practice. To defend and specify the concept of professional practice for doctoral supervision, I draw on a comparative study of supervision practices in two disciplinary fields (physics and social sciences) and different organisational contexts in the German academic system. I argue that the creation of independent researchers and new knowledge constitute a specific interaction between supervisors and novices beyond disciplinary and organisational differences. Autonomy and dependence, self-learning and guidance, production and solution of intellectual crisis and conflicting role patterns create an inherent tension in supervision practice that cannot be resolved by formal structures and is therefore best described as professional practice.

Keywords

supervision practice, supervisory interaction, professional work, institutional policy, disciplinary diversity

Introduction

Today, most discussions to improve doctoral education and research focus on external regulative structures for the PhD process such as organisation building, techniques of project planning and control or adding coursework and generic knowledge to instruct doctoral students. This new model of 'structured' doctorates is the outcome of worldwide policy discourses. These confront the traditional apprenticeship model with the needs of knowledge societies and economies for higher completion and lower attrition rates as well as more timely, predictable and transparent doctorates (Nerad, 2010). At the same time, the 'structured' approach tends to conceptualize doctoral education as 'technical process' (Connell & Manathunga, 2012) and ignores the complex aims and specific epistemic as well as social dynamics inherent in doctoral research supervision. In most countries it is expected that supervisors and PhD candidates engage in an open-ended relationship in order to advance knowledge and increase the doctoral student's capability to perform as an independent researcher. Simultaneous calls for independence and intervention, new knowledge and robust instructions create a contradictory situation that is best described as an uncertain 'professional practice' with specific properties. This article draws attention to structures inherent in the supervisory situation and the subsequent complex relationship between supervisors and the PhD candidates. In order to do so I use insights from the sociological theory of the professions as well as empirical studies from doctoral education research to conceptualise 'professional practice' for doctoral supervision; respond to profound theoretical criticisms; and provide evidence from supervisory practices in physics and social science within the 'structured' model from an empirical study in the German academic system. I find that that new regulative structures cannot resolve the structural dilemmas that are still prevalent at the heart of doctoral supervision.

What is a professional practice?

In everyday life the meaning of the word 'professional' is opaque. Sometimes it just refers to 'good', 'paid', 'systematic' or 'expert' work. In doctoral education the term professional is often used as a synonym for organizational control or non-academic fields as the notion of 'professional PhD' indicates. In social theory the term 'professional' has a specific meaning. It refers to specific properties of a small group of expert occupations such as law, the medical or academic profession. The first line of reasoning defines professions along institutional criteria such as their important function in society, high value or status and power to define and control the content of their work on the basis of codified knowledge (Abbott, 1988; Freidson, 1986; Larson, 1977; Parsons, 1939). The second, and for my argument more important, line of reasoning draws attention to the occupational practice itself. Professions deal with fundamental personal, normative or intellectual problems and rely therefore on a complex, uncertain and often crisis-prone practice (Hughes, 1971; Marshall, 1939; Oevermann, 1996). Professional practice is defined as a non-routine expert work for several reasons that apply to doctoral supervision as well.

First, professions deal with critical situations of patients, clients or in our case novices who ought to learn how to advance knowledge independently by doing original research for the

very first time. Ph.D. students have to solve an intellectual crisis that unleash with unanswered questions and often expand to a personal crisis of self-doubt. Second, professionals and supervisors have a knowledge application problem. They apply theoretical or practical knowledge to particular, new or even unknown cases and situations. The application of theories, methods or techniques does not automatically advance knowledge wherefore success cannot be guaranteed. Third, Ph.D. students cannot entirely delegate their research problems to supervisors. Candidates have to prove whether they are capable to solve and create scientific problems independently. PhD students often know the empirical or experimental results and pitfalls better than supervisors. Fourth, intervention problems arise in professional practices. In doctoral supervision a structural tension between the expectation to instruct and to create independent researchers is essential. If new knowledge is at stake there is typically a lack of instructions. Traditionally, this uncertain, unpredictable and flexible professional practice was organized in an informal way. Professionals and clients or in our case supervisors and novices build a personal working alliance and cooperate towards unspecified goals such as 'advancing knowledge' and 'creating independent scholars' on the basis of implicit knowledge, ethics, norms and role expectations. This traditional concept of 'professional practice' is under attack and in transition worldwide for several reasons. In the following, I respond to main criticisms, draw conclusions for the design of my empirical study of supervision practices and illustrate some essentials of this practice that persist within new formal structures.

Criticisms of the 'professional practice' concept

Critics argue that the notion of 'professional practice' is an ideology to valorise ordinary occupational practices, ignores the disunity of academic disciplines and recent governance changes that result in a de-professionalization or cannot be applied to scientific practice (Table 1). My empirical investigation of supervision practices in Germany responds to four main and longstanding criticisms of the professional practice concept. I briefly summarise the first three criticisms and focus on the last to analyse properties of the working alliance between supervisors and Ph.D. students as a particular professional practice.

The first objection doubts that science and other occupations are organized in different ways. Since the 70s sociology of science claims that every statement on the nature of scientific or in our case supervisory and doctoral research practice has to be assessed on the level of practice (Knorr Cetina, 1981; Latour & Woolgar, 1979). Without such proof, all institutional scripts, organizational rules, theoretical models or statements remain pure 'ideologies'. For this reason, it is important to analyse supervision as a specific social practice (Alison Lee & Boud, 2009) and how it is performed in reality. My study therefore reconstructs the structures at work in supervision practices and draws on data of this practice from two ethnographies in physics and social science graduate schools summarized in Table 2. The sample includes qualitative interviews with supervisors and PhD students as well as site observations and recorded supervisory interactions to overcome the limits of accounts and narratives most studies of supervision build on (Atkinson, Delamont, & Parry, 2003).

The second objection emphasizes the variety of doctoral education across research fields and tends to deny generic structures (Becher & Trowler, 2001; Clark, 1989; Knorr-Cetina, 1999). A disciplinary comparison was necessary in order to seek out overarching structures of doctoral education and research that exist beyond difference (Pearson, Cowan, & Liston, 2009). I compare the highly individualistic and multi-paradigmatic social sciences with the collectivistic and paradigmatic physics. My study includes different forms of team supervision in research groups, one-to-one supervision or peer-to-peer supervision in daily laboratory work. Despite very different contexts and ways to deal with supervision all disciplines struggle with the uncertainties of knowledge production and the support of candidates in becoming independent researchers. It will be shown, that coping with structural tensions and paradoxes is ubiquitous in supervision.

The third objection is central to global science policy discourses. The critics of the old apprenticeship model argue that supervision is not at all a professional practice but rather organized in an amateurish fashion. The shift from a professional to a 'structured' doctorate suggests that the uncertainties of the supervision process can be resolved by formal organisations (Byrne, Jørgensen, & Loukkola, 2013). To tackle these uncertainties, new organisational structures such as graduate schools, selection procedures, supervision agreements, curricula and monitoring systems emerge to enhance, supplement or even replace the apprenticeship model. In my study I compare supervision practices within and without such new organisational forms to measure the impact of this institutional change. A key finding is that the traditional apprenticeship model is still at the heart of the new 'structured'

doctoral education model. For this reason, I draw attention to the properties of the supervisory relationship by describing it as a particular professional working alliance.

The fourth objection doubts the comparability of the professional and supervisory situation because supervisors and candidates engage in an intellectual rather than an acute personal crisis to gain scientific rather than to restore or restrict primary independence. The role relations are also different in doctoral supervision because Ph.D. candidates are future colleagues in the same field of study rather than laymen clients. For this reason, my study considers the similarities and obvious differences to specify doctoral supervision as a particular working alliance.

Doctoral supervision as a specific professional working alliance

In the following, I draw on studies in the field of doctoral education research and on my own investigation to illustrate specific structures of the working alliance in doctoral supervision. Many studies conceptualize doctoral education and research as a process of socialization to the academic profession (Bragg, 1976; Corcoran & Clark, 1984; Gardner & Barnes, 2007; Gardner & Mendoza, 2010; Weidman, Twale, & Stein, 2001) or various disciplines (Golde & Walker, 2006; Parry, 2007). The professional socialization process has been described in terms of a formal 'status passage' accompanied by informal 'rites of passage' (Gennep, 1960; Glaser & Strauss, 2010; Van Maanen, 1978); implicit learning process ('learning by doing') in the course of doing research (Traweek, 1988); and as a demanding supervisory interaction. According to empirical studies, the supervisory interaction builds on structural

TABLE 1: ANALYTICAL RESPONSES TO CRITICISMS OF THE PROFESSIONAL PRACTICE CONCEPT

| Criticism | Discourse | Analytical objective | Data |
|------------------------|--|--|---|
| Specific practice? | Ideology critique: Social studies of science | Structures at work in supervision | Ethnographies, recordings of everyday practices, interviews |
| Uniform practice? | Variety of disciplines: Differentiation theory | Generic structures across research fields | Social sciences and physics |
| Organized practice? | External control: Governance | Impact of new organizational structures | Supervision practices within different organizations |
| Professional practice? | scientific vs. professional practice | Specificity of working alliance in supervision | Tape recordings of supervisory interactions |

TABLE 2: DATA

| Field | Supervisors | PhD students (external) | Interviews | Interactions (group) | Site observations |
|-----------------|-------------|-------------------------|------------|----------------------|--|
| Social Sciences | 15 | 25 (10) | 8 | 20 (7) | Office, workshops, colloquia, Summerschool |
| Physics | 6 | 21 (0) | 9 | 20 (6) | Office, laboratory, team meeting, journal club, etc. |
| Total | 21 | 46 (10) | 17 | 40 (13) | |

tensions and subsequently calls for 'creating a delicate balance' (Delamont, Parry, & Atkinson, 1998) between conflicting requirements. These include, for example, the emphasis on mutual dependencies and responsibilities (B. Grant & Graham, 1999; B. M. Grant, 2010), the tension between autonomy and intervention or role conflicts inherent to the transitional position of Ph.D. candidates (Gardner, 2008; Anne Lee, 2008). Unfortunately, only a few studies directly link doctoral supervision to the more general concept of professional working alliances (Halse & Bansel, 2012; Halse & Malfroy, 2010). However, these studies do not refer to the underlying theory of professions. According to the theory of professional action the interaction between professionals, clients, patients or in our case novices can be described as a demanding working alliance (Oevermann, 1996). Professionals and patients, clients or novices build a relationship in order to produce the conditions to solve a case specific personal, normative or intellectual problem. For this reason Edward S. Bordin claims in his definition of supervision as a working alliance that the 'building and repair process [of the relationship] is the treatment' (Bordin, 1983). This means in the case of doctoral supervision that the anticipation of the novice role, capabilities to face intellectual problems, to ask for help and to learn how to solve problems independently as well as the search for necessary 'tasks', 'goals' and 'bonds' (ibid.) are part of the relation building process. In this process of 'improvising together' (B. M. Grant, 2010) supervisors and Ph.D. students are interdependent and lack precise role models at the beginning. For example, Ph.D. students have to communicate (typically unclear) research problems in order to get advice and supervisors depend on precise information to give advice. As a consequence, they cooperate to find out possible (and worthwhile) problems as well as solutions before Ph.D. students test the appropriateness of advices in scientific practice. However, linking doctoral supervision to insights from the theory of professions has (at least) three analytical advantages. First, the analysis of doctoral supervision can be used for social theory building. Commonalities in doctoral supervision and other professional working alliances would demonstrate against all doubts that science is (still) a profession. Second, comparing doctoral supervision with the working alliance of other professions is useful to specify supervisory relationships. Third, structural properties of professional practice explain why doctoral supervision persists despite far reaching institutional changes in doctoral education.

In the following last section, I draw on my empirical investigation of supervisory relationships and interactions within the new 'structured' doctorate in Germany. I illustrate some structures of doctoral supervision that occur beyond disciplinary or organisational particularities and create a specific working alliance.

Persistence of the supervisory working alliance within new institutional structures. Examples from the German case

The German doctoral education and research system traditionally relies on an individual relationship between powerful supervisors and Ph.D. students, exemplified by the still common term of 'doctoral father/mother' (Green & Lee, 2009). Since 1985, an alternative institutional model of 'structured' doctorates emerged in science policy in order to replace the traditional system. For this reason, formal organisational structures of graduate schools, collective and transparent

selection, control and assessment procedures as well as coursework have been introduced. The following examples demonstrate that specific structures of the supervisory relationship persist within this new framework.

Establishing personal relationships

The structured doctorate relies on the idea of shared institutional responsibilities and impersonal organisational structures such as collective selection procedures or formal supervision agreements. However, engaging in a supervision relationship is still a voluntary and personal decision for supervisors and candidates alike. Acceptance or rejections of applications take place in committees, but it is not independent of the advisors or doctoral students. Potential advisors need to be interested in an application, exemplified in the comment by a director of a social sciences graduate school: 'no one would foist just any candidate on a colleague.' The same goes for doctoral candidates who would not be forced into the 'hard, clearly father-son-like relationship that you can't get out of'. Instead, the first year is reserved for finding a supervisor, building and committing to a personal relationship. Supervisors and candidates explain the importance of personal relationships in vary ways. From an institutional perspective they still take the main responsibility in the Ph.D. process; Ph.D. students' careers depend considerably on the support of supervisors and their academic networks; supervisors' motivation to engage in supervision relies on personal relations and/or their benefit of doctoral work; and personal trust is a condition to begin a relationship, whose length of time, topical and social dynamics no one can know in advance. In doctoral supervision personal relationships and responsibilities are even more important than in other professions where a referral to colleagues is usual.

Supervision as co-production of knowledge

One important difference to other professional working alliances is that supervision is not a one-way street. Sometimes it is very explicit that supervision is embedded in working relationships when students are hired to work on their advisor's project or are given a topic to work on. There is also a general assumption that the quality of supervision depends upon the mutual alignment of interests expressed in attempts to outsource, redirect or embed doctoral projects in the research lines of the advisors. A postdoc pointed out the mutual obligations in the supervision process: 'A doctoral student has his own interests, but I also have my interests, I have to see what comes out of it. It's also about me, and about the time that I invest in supervising.' The mutual alignment of research interest is important for supervisors and Ph.D. students to facilitate one's own research. Other professions similarly rely on the activity of patients or clients in order to get important information or to change their situations. But professionals are expected to define appropriate solutions to a given problem, whereas in doctoral education supervisors and doctoral students interact in order to define and resolve problems.

Autonomy as selection criteria and pre-condition for academic work

Unlike client-related professions, where autonomy problems are the reason for initiating a working alliance, scientific independence is an important outcome and a pre-condition as well as selection criteria in academic working alliances

right from the beginning. Ph.D. students are selected based on expected performance independently in scientific practice rather than as dependent 'lab slaves'. One interviewee, an economist states that doctoral students must have learned basic skills already, because 'for a PhD, I look for people that can somehow navigate the chaos of science for themselves.' To form a judgement on the independence of students' advisors still prefer to seek for potential candidates among students or ask colleagues for recommendations.

Voluntary supervision meetings

The principle that preserves independence is voluntary action, and this principle applies to the question of 'who' requests a supervisory meeting as well. In contrast to the expectations in the structured doctorate, advisors express their preference for 'requested consultation' (Engler 2003) rather than requiring a student to come talk to them. Initiative has to come from the doctoral student; otherwise, supervision would cross a tipping point to become a monitoring and control situation. Thus one advisor expressed his reservation to structure the supervision 'more stringently,' because then 'there would naturally be an asymmetry in the way we would be discussing the content.' Instead, there are various ways of making a supervision talk more inviting such as the open door politics of a physics professor: 'the door stays open because I want to invite them rather than sinking in a problem to come to me and say, I don't know what to do. On the other hand, I place great value on not imposing myself on them.' For PhD students it is self-evident that they make appointments after having tried other avenues first. Anything else would be to fail in their obligation to act independently as a doctoral student from astronomy explains: 'I can't just say can we sit two, three hours and every day and work on this, because I am a PhD student. We are supposed to do it on our own.'

Expected independence as an intervention problem

The transitional role of Ph.D. students as future colleagues creates a specific intervention problem in the working alliance. The early anticipation of the colleague role can incite the participants to speak more in terms of success than about doubts: 'Asking for help may be interpreted by students as an inability to do what is expected of them' (Egan, 1989). In my analysis I found many examples in supervisory interactions how supervisors seek and Ph.D. students hide research problems in order to perform as promising colleague, to keep independence and to prevent interventions. These interactions bear a tendency to end up either in pure academic conversations between colleagues with some vague suggestions or run into an unrequested harsh critique of the students' capabilities. Although Ph.D. students may only ask for a solution, acknowledgement or recognition. Finally, strong criticism is the last difference between academic and other professional working alliances. It is an important part of the supervision process to trigger intellectual problems rather than solving them for Ph.D. students in order to ensure timely completion. Such examples demonstrate that structural properties of the supervisory working alliance persist within new ways of organizing doctoral education and research. The smooth functioning of the working alliance in doctoral supervision seems to depend on personal engagement, shared research interests,

autonomy and voluntary action as well as interventions in the intellectual order of PhD students.

Conclusion

This article demonstrates that structural properties of doctoral supervision persist within new organisational forms. I assume, this result is not limited to the German case and has structural causes. The working alliance in doctoral supervision is a particular professional practice that as such can hardly be substituted by formal structures. Follow-up studies need to examine this hypothesis by (a) taking more institutional variations into account, (b) analysing the actual practice of doctoral education and research within new formal structures, (c) investigating impacts and limits of formal organizations in doctoral education and research practice and (d) explaining these in terms of the specific properties of the 'professional practice'. If formal organizations cannot replace this practice a challenging question still remains: What can be done to support the working alliance between supervisors and PhD students? I have no sufficient answer to this question but two general remarks. According to my study, supervisors and Ph.D. students constantly reflect on supervisory relationships but hardly communicate expectations directly. Strategies to foster such a meta-communication between supervisors and candidates might be helpful. My second remark is that PhD students should be better integrated in the everyday research of supervisors in order to build productive working alliances rather than hoarding them in isolated offices and organisations for doctoral education.

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Exploring the synergies between research programs and postgraduate research degree programs

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Abstract

In this paper, two case studies of internationally successful research development programs and their relationships to postgraduate programs are explored. In one research program, cognitive science principles have been applied to education,

leading to the development of Cognitive Load Theory. In the other, principles and processes of organisational learning based on action research, action learning, reflective practice and case study research have been integrated leading to the development of the Work-Applied Learning model for effective organisational change. In both cases, the associated research degree programs were important vehicles for the development of the research agendas. The common characteristics in both cases were innovation and leadership; close synergy between the research degree program management and leadership and the research agendas; combining the research candidates' expertise, discipline knowledge and contexts with an innovative learning theory and practice; building research developments via the insights gained from research degree programs on each other; and forging researcher collaborations internationally between researchers with a passion for innovation in common areas. The differences identified consisted of different funding contexts, public university research resource access combined with private industry resourcing vs. private research funding via industry sources and university collaborations; and different scope of the theory applications, where one was heavily focused on organisational learning and change and the other was focused on educational design and learning implementation across school and tertiary education and industrial training.

Keywords

Work-Applied Learning, Cognitive Load Theory, postgraduate supervision, research program, leadership.

Introduction

In concluding her panoramic discussion of Australian doctoral research education in a global context, Pearson (2005) argued

'... research directions in doctoral education might usefully include more complementary macro- and micro-level studies, more critical analysis grounded in empirical data, more fine-grained analysis of local activity and human agency, and more recognition of the broad range of stakeholder interests.'

The material presented in this paper is intended to focus on the micro-level analysis, firmly grounded in two empirical case studies, but which link numerous cases within each of the overall case studies. The cases within cases structure enables a substantive comparative analysis to be undertaken. It deals with the local activity, but in an international context, and focuses in particular on the human agency and illuminates the stakeholder interests.

Associated with two major long-term research endeavours which have produced substantial research outcomes were significant postgraduate research degree programs. Thus, this is an exploration of the relationship of postgraduate research, doctoral research in particular, in relation to other research. One of these research and research degree developments was conducted in a public higher education context, while the other was forged in and alongside the development of a private higher education provider. In this paper the commonalities of these exemplars, as well as their differing implications will be explored.

One of these programs was the development of Cognitive Load Theory (Sweller, Ayres & Kalyuga, 2011) by John Sweller and his colleagues, both in Australia and overseas. The other was the development of the Work-Applied Learning model (Abraham, 2012) by Selva Abraham and his associates.

In this paper each of the research developments is firstly described briefly; then the common characteristics of two situations are explored, especially focusing on the relationship of the program developments with regard to postgraduate research degree programs and particularly in terms of the research program outputs, in theses and project reports; following that the differences between the two cases are highlighted and finally the emerging insights from the two cases are presented.

Cognitive Load Theory

Cognitive Load Theory (CLT) grew out of the fundamental recognition that the central processing space of human cognitive architecture, working memory, has capacity limitations (Miller, 1956; Sweller, 1988; Sweller, Ayres & Kalyuga, 2011, p.42). Starting from the perspective of seeking to understand the various capabilities of the human cognitive architecture and their instructional implications the research teams led by Sweller, the post-graduate students researching in this area, both with Sweller and his colleagues at UNSW, and his collaborating researchers around the world and their post-graduate students, have pursued this fruitful research vein and have produced significant outcomes in a numerous areas of application, especially in education (Moreno & Park, 2010).

Central to cognitive load theory is the Atkinson and Shiffrin (1968) formulation of human cognitive architecture, which is thought to consist of three main components: the sensory register, the short-term store or working memory, and the long-term store. The critical aspect of working memory in dealing with incoming information from the sensory register, processing it and storing it in the long-term memory store, i.e. the process of learning, is limited by the processing capacity of working memory. How these limitations may be optimally taken into account and how the various processing characteristics may be optimally used to improve instructional and learning processes have been the key focus areas of investigations by the cognitive load theory researchers. Sweller carried out a large amount of the research in the cognitive load context with postgraduate students.

Table 1 lists a fairly recent CLT compilation of the robust, instructionally useful effects identified using the cognitive load theory framework (Sweller, 2010).

The research underpinning these developments has involved a mixture of leading individual work by established researchers, such as Sweller (1988), van Merriënboer (1990), Paas (1992), Mayer (2004), and Moreno (2006), research among a group of established researchers (e.g. see Sweller, van Merriënboer & Paas, 1998) or research by postgraduate students with experienced researchers (e.g. see Tuovinen & Sweller, 1999). The postgraduate student work could be conceptualised in terms of the postgraduate students joining in an overall research flow, where they took advantage of the previously

TABLE 1: COGNITIVE LOAD EFFECTS

| Cognitive Load Effect | Description | Key References |
|-------------------------------|--|-------------------------------------|
| Worked-Example | Studying worked examples results in better performance on subsequent tests of problem solving than solving the equivalent problems | (Renkl, 2005) |
| Completion | Requiring learners to complete partially solved problems can be just as effective as worked examples | (Paas & van Merriënboer, 1994) |
| Split-Attention | Multiple sources of information that are unintelligible in isolation result in less learning when they are presented in split-attention as opposed to integrated format | (Ayres & Sweller, 2005) |
| Modality | Multiple sources of information that are unintelligible in isolation result in less learning when they are presented in single-modality as opposed to dual-modality format | (Low & Sweller, 2005) |
| Redundancy | The presence of sources of information that do not contribute to schema acquisition or automation interfere with learning | (Sweller, 2005) |
| Expertise reversal | With increasing expertise, instructional procedures that are effective with novices can lose their effectiveness, whereas ineffective techniques can become effective | (Kalyuga, 2005) |
| Guidance fading | With increasing expertise, learners should be presented worked examples followed by completion problems and then full problems rather than worked examples alone | (Renkl, 2005) |
| Goal-Free | Problems presented in goal-free form enhance learning compared with conventional problems | (Paas, Camp & Rikers, 2001) |
| Element interactivity | Cognitive load effects are only obtainable using high rather than low element interactivity material | (Sweller, 1994) |
| Isolated/interacting elements | Learning is enhanced if very high element interactivity material is first presented as isolated elements followed by interacting elements versions rather than as interacting form initially | (Pollock, Chandler & Sweller, 2002) |
| Variable Examples | Examples with variable surface features enhance learning compared with examples with similar features | (Paas & Van Merriënboer, 1994) |
| Imagination | Imagining procedures or concepts enhance learning compared with studying materials | (Leahy & Sweller, 2004) |
| Transient Information | Information presented as animations or in spoken form is transient and so imposes a heavier cognitive load than static graphics or written information | (Leahy & Sweller, 2011) |

explored aspects of the research agenda while bringing in their own discipline understandings and contextual needs and perspectives. In these circumstance they would take advantage of the pre-existing fresh research, as well as jumping into hot, newly developing relevant issues or perhaps exploring the way the recent research would work in their contexts. The change in the contexts of application of the recent research advances often led to surprising new roadblocks, which then resulted in new creative work to develop an even better understanding of

human cognitive architecture and its learning and instructional implications, e.g. in the development of the split-attention effect (Sweller, Ayers & Kalyuga, 2011, p.111; Tarmizi & Sweller, 1988).

Table 2 includes some typical studies by Sweller's postgraduate candidates, their thesis titles and the relevance of their postgraduate research studies to key developments in cognitive load theory (CLT).

TABLE 2: SELECTED POSTGRADUATE STUDENTS' THESES SUPERVISED BY JOHN SWELLER

| Year completed | Candidate name | Thesis title | Key Relevance to CLT |
|----------------|------------------------|--|--|
| 1988 | Graham Cooper | Mathematical problem solving transfer: the effects of cognitive load and attention on schema acquisition and rule automation | Worked examples effect |
| 1992 | Paul Chandler | Cognitive load theory and the design of instruction | Split-attention effect Redundancy Effect |
| 1993 | Janette Bobis | Demands imposed on children by mathematics instructional material | Redundancy effect Split-attention effect Goal-free effect |
| 1997 | Wangari Mwangi | The effect of example format and self-explanations on children's word problem solving | Worked examples effect Split-attention effect Self-explanations in problem solving |
| 1997 | Martin Maguire | The use of computational models to assess the cognitive load associated with the worked example and split-attention effects | Worked examples Split-attention effects |
| 1998 | Slava Kalyuga | Studies in split-attention and redundancy | Split-attention effects Redundancy effects |
| 1999 | Juhani Tuovinen | The cognitive load of discovery learning | Worked examples effect Element interactivity Expertise reversal effect |
| 2000 | Edwina Pollock | Assimilating complex information | Isolated-interacting elements effect |
| 2000 | Wayne Leahy | Cognitive load theory: studies in modality and redundancy | Modality effects Redundancy effects |
| 2001 | Kanda Sakul-thanasakdi | Applying cognitive load theory to second language acquisition | Split-attention effects Modality effects |
| 2002 | Diana Po Lan Sham | A dual coding model of processing Chinese as a second language : a cognitive-load approach | Redundancy Effects Dual coding model of language acquisition |
| 2002 | Paul Ginns | When imagining instructions is effective | Imagination effect Worked examples Element interactivity |
| 2004 | Duncan Pawley | A cognitive load approach to instruction in formation of algebraic equations | Expertise reversal effect Worked examples effect |
| 2005 | Paul Owens | Cognitive load theory and music instruction | Split-attention effects Dual-modality effects |
| 2008 | Endah Retnowati | The effectiveness of a worked example approach in group work settings during mathematics learning | Worked example effects Group work in learning |
| 2008 | Majeda Awawdeh-Caleo | Cognitive load theory and mathematics education | Worked examples effects |
| 2008 | Jase Moussa | The impact of spoken English on learning English as a foreign language: a cognitive load perspective | Redundancy effects |
| 2009 | Mark Kissane | Managing levels of instructional guidance in financial services training: a cognitive load approach | Guidance fading effects |

TABLE 2: SELECTED POSTGRADUATE STUDENTS' THESES SUPERVISED BY JOHN SWELLER

| Year completed | Candidate name | Thesis title | Key Relevance to CLT |
|----------------|---------------------------|---|---|
| 2009 | Susannah Marie Torcasio | The use of illustrations when learning to read: a cognitive load theory approach | Redundancy effects |
| 2009 | Annishka Oksa | Expertise reversal effect in explanatory notes for readers of Shakespearean text | Expertise reversal effect |
| 2010 | Muhammad Asif Khawaja | Cognitive load measurement using speech and linguistic features | Measurement of cognitive load |
| 2010 | Chee Ha Lee | Effectiveness of different Pinyin presentation formats in learning Chinese: a cognitive load perspective | Split-attention effects Redundancy effects |
| 2011 | Rita Di Mascio | The effect of instructions on problem-solving creativity | Problem-solving Creativity Element interactivity |
| 2012 | Geoffrey Woolcot | Perspectives on information processing systems and their application to educational theories and practices | Information processing systems and learning theories |
| 2014 | Chih-Yi Hsu | The effects of principle-based information on the sequence of pairing worked examples and problems in physics learning | Worked examples effects Variability of guidance |
| 2012 | Sahar Bokosmaty | Learning geometry problem solving by studying worked-examples: effects of learner guidance and expertise | Worked examples effects Variability of guidance Expertise effects |
| 2012 | Suna Kyun | Application of contemporary theories of human cognitive architecture to the design of ill-defined learning domains : the effect of worked examples when learning English literature | Worked examples effects Expertise effects |
| 2012 | Yuan Gao | Effects of speaker variability on learning spoken English For EFL learners | Variability effects |
| 2012 | Amina Youssef-Shalala | Using a General Problem-Solving Strategy to facilitate learning | General Problem-Solving Strategy to facilitate learning |
| 2012 | Mariya Pachman | The role of deliberate practice in acquisition of expertise in well-structured domains | Role of deliberate practice in acquisition of expertise Expertise reversal effects |
| 2013 | Endah Retnowati | Collaborative learning and cognitive load theory | Worked examples effects Prior knowledge effects Element interactivity Collaborative learning |
| 2013 | Kimberley Crompton Leslie | Redundancy and expertise reversal effects when using multimodal materials to learn primary school science : a cognitive load theory perspective | Redundancy effects Expertise reversal effects Modality effects |
| 2013 | Paul Blayney | Application of cognitive load theory to the design of learning tasks and instruction in accounting. | Isolated - interactive elements effects Expertise reversal effect |
| 2014 | Hong Kok Ng | The use of tracing to reduce transience in instructional animations: a cognitive load theory perspective | Split-attention effects Reducing transience in instructional animations |
| 2014 | Bipasha Haque | Cognitive load theory and listening to accent variations in English | Variability effects Expertise reversal effects |

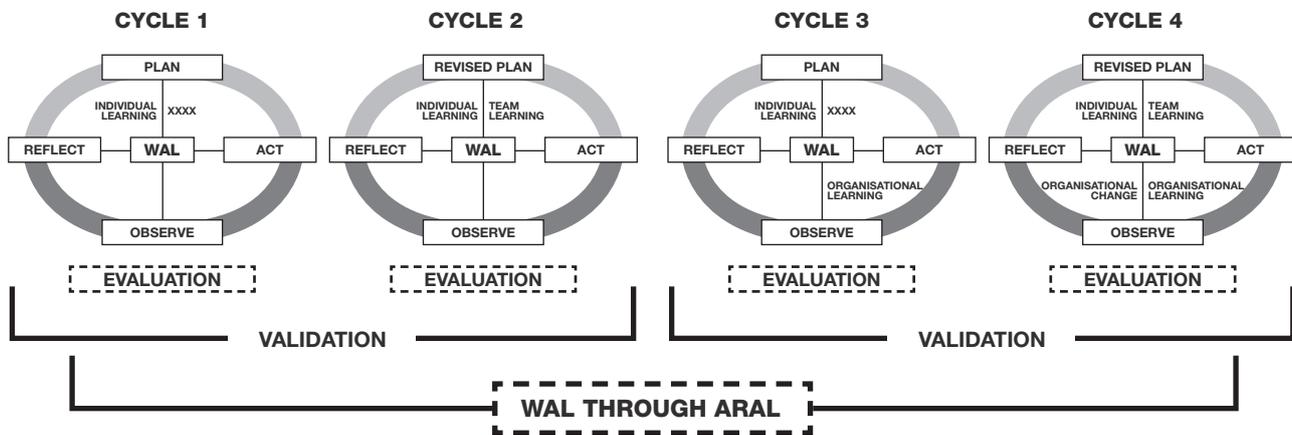


Figure 1: Learning and change process through AR cycles (Abraham, 2012)

Work-Applied Learning

The Work-Applied Learning model has been developed in the context of organisational learning and change (Abraham, 2012; Garnett, Costley, Abraham & Abraham, 2015). The Work-Applied Learning (WAL) model that Abraham developed recognises the workplace as the crucible for change and is designed to enable managers to learn and introduce change through a series of Action Research (AR) cycles, as shown in Figure 1 (Abraham, 2012).

The various detailed aspects of the WAL process include action research group meetings, knowledge workshops, work-based activity phases, collaborative planning (which includes diagnosis of the issues in the organisation), acting, observation, reflection, monitoring, evaluation and validation (Garnett et al, 2015; Abraham, 2012).

Work-Applied Learning development has progressed due to Abraham's interest and passion in developing improving ways of implementing organisational learning for change and development. He developed his interest in improving sustainable collaborative learning and change processes particularly aimed at organisational managers from his experience as an organisational consultant. His MBA studies at Henley Management College in UK, introduced him to Work-Based Learning (WBL), action research and action learning. He utilised these components with participant observation and reflective practice in his subsequent consultancy, leading to the establishment of the Gibran Integrated Management Development Program in Australia, and acquiring formal course accreditation for this program. In his PhD work at Flinders University in the early 1990's he used Action Research method with in-built Action Learning process to develop the board members of an Indigenous community organisation based in Port Lincoln, South Australia. This early model of the Work-Applied Learning program has continued to evolve to a higher level of sophistication.

In 1995, Abraham founded the private higher education institution now known as the Australian Institute of Business (AIB) (<http://www.aib.edu.au/>). It is the only private higher education institution in Australia which is accredited to award a Masters by Research, DBA and PhD in business and management and now has the largest MBA cohort in Australia.

Abraham also established a research and consultancy centre, currently named the Global Centre for Work-Applied Learning. It is dedicated to undertaking research in WAL and WBL and their continuing relevance to organisations and communities in the context of change (<http://gcwal.com.au/>).

As noted in the development of the Cognitive Load Theory research program previously, the research development work has involved individual personal research work by the lead researcher, e.g. see the PhD thesis by Abraham (1993), consultancies with organisations (e.g. see Brimson, 2012; Abraham, 2012, pp. 19-33), research by groups of established researchers (Abraham, Arnold, & Oxenberry, 1996) and numerous collaborations with candidates undertaking postgraduate qualifications (e.g. see Ahmad, 1998; Fng, 2014). This is more comprehensively described by listing selected examples of these produced by postgraduates who were either supervised by Abraham or where he had significant input into their programs, e.g. see the Masters theses by the candidates from the Universiti of Sarawak, Malaysia, in Table 3.

Many of the research theses listed in Table 3 arose as a result of typical postgraduate research supervision by Abraham, but in some situations he provided expert development and guidance at various stages through research degree programs. For example, the Universiti Malaysia Sarawak was engaged by the Chief Minister's Department (Sarawak) to provide a Human Resource Development program using action research and action learning for about twenty managers in the public service in 1997-98. They needed expertise in action research and action learning, so they contracted Abraham,

and his organisation, Gibaran Action Research Management Institute (GARM), Australia, to provide training and facilitation in the application of action research and action learning by these managers. These managers were enrolled in a Master of Science (Human Resource Development) with Universiti Malaysia Sarawak and were each required to undertake an Action Research project leading to a thesis. All the candidates in

this program came to Australia for a five-day intensive workshop on action research and action learning. After the intensive workshop program, they developed their research project proposals, which were then reviewed by Abraham and his team, after which they each implemented and reported on their findings and conclusions. Abraham provided guidance to the Master's Program director at Universiti Malaysia Sarawak.

TABLE 3: SELECTED EXAMPLES OF SELVA ABRAHAM'S RESEARCH/POSTGRADUATE RESEARCH

| Year | Key Researcher(s) | Publication title | Outcome/publication type |
|------|-----------------------------|---|--|
| 1993 | Selva Abraham | A management training and development programme for Indigenous community leaders: A case study | PhD thesis, Flinders University |
| 1998 | Elizabeth Loh | A study of the Hotline Complaint Service in Kuching City South Council with a View to Making it More Effective through Action Research | Master of Science (Human Resource Development) thesis. Sarawak, Malaysia: Universiti Malaysia Sarawak. |
| 1998 | Anthonius L. Sindang | An Action Research Study on the Constraints and Problems in the Implementations of the New Concepts of Native Customary Rights (NCR) Land Development Pilot Project | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Charley Lim Beng Liang | Corporatization of Mechanical Services Division Department of Irrigation and Drainage Sarawak | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Julata Akaw | Designing an Effective Training Evaluating System for Training Programmes in Sarawak Timber Industry Development Corporation an Action Research Study | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Dany Anak Neb | Developing a Systematic Approach to Training for the Agriculture Assistants of the Department of Agriculture, Sarawak Through Action Research | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Brahim Lumpu | Developing a Systematic Surveillance and Enforcement Activities for the Enforcement Branch of the Department of Land Survey in Samarahan Division, Sarawak | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Abang Yusuf Bin Abang Spawi | Exploring Effective Performance of Meter Readers in SESCO Regional Office, Bintawa: Case Study Based on Action Learning | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Ang Tze How | Exploring Possible Ways to assist New Employees Become Effective Members of Land and Survey Department, Sarawak: An Action Learning Research Study | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Malcolm Yong Kar Siew | Exploring the Approaches Toward an Effective Succession System for Managers in the Public Works Department Sarawak: An Action Research Study | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Norlah Ahmad | Exploring the effectiveness of Core Development Programs in Chief Ministers's Department by Applying Action Research Method | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Bujang bin Haji Budin | Exploring the Possibility of Developing an Effective Solid Waste Management Practices for Two Towns in Sarawak: An Action Research Study | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Hayati Kiprawi | Exploring the Use of Action Learning for the Operational Clerks to Improve the Effectiveness and Efficiency of their Operational Services in Rajang Port Authority | Master of Science thesis: Universiti Malaysia Sarawak |

TABLE 3: SELECTED EXAMPLES OF SELVA ABRAHAM'S RESEARCH/POSTGRADUATE RESEARCH

| Year | Key Researcher(s) | Publication title | Outcome/publication type |
|------|--|---|---|
| 1998 | Anthony Valentine Laiseh | Exploring the Utilisation of Geographic Information Systems Technology to Effect Integrated Regional and Sectoral Development Planning for Sarawak: An Action Research Case Study | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Sharifah Alavyah Bte. Syed Muhammad Shibli | Exploring the Way to Improve Communication Practices within Section III, Human Resource Management Division, Chief Ministers Department: An Action Learning Approach | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Ik Pahon Joylik | Exploring Ways to Improve the Sports Incentives and Rewards Scheme for Sports Officials and Sportsmen through Action Research | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Kendy Edward | Improving the Delivery and Management of Public Assistance to the Target Groups of the Sarawak State Social Welfare Department, Through Action Learning | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Ubaidillah bin Abdul Latip | Reviewing Current Policies, Processes, and Practices of Public Works Department's Budgeting and Expenditure for Capital Development Programmes and Projects: An Action Research | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Hil Chang Kee | The use of Action Learning As a Group Problem Solving Proccess in Sibiu Municipal Council | Master of Science thesis: Universiti Malaysia Sarawak |
| 1998 | Hallman bin Sabri | Transforming the Centre for Modern Management into a Market and Customer Driven Organization by Using the Business Development and Marketing Function as a Case Study | Master of Science thesis: Universiti Malaysia Sarawak |
| 2001 | Mohammed Bin Hashim | Introducing Change in a Bumiputra shipping organisation in Malaysia – an action research case study | DBA Thesis, Southern Cross University |
| 2003 | Andrew Cook | Introducing market orientation in a small Australian general insurance business. An action research case study. | Master of Management thesis |
| 2005 | Chris Riley | A case study analysis of the rationale of incorporating Action Learning into Australian MBA programmes | PhD thesis |
| 2007 | Diane Kalendra | Developing a marketing orientation in a government business enterprise | PhD thesis |
| 2007 | Arch Stevenson | Indigenous staff development using action learning in a large government business enterprise | Master of Management thesis |
| 2007 | Alois Daton | Restructuring a government department in Papua New Guinea Public Service using the AR approach | DBA thesis |
| 2007 | Kevin Fernando | How do HRM strategies add value for a multinational company in Asia? | DBA thesis |
| 2012 | Erwin Loh | Medical doctors and hospital management: medical management competencies and postgraduate medical training. | PhD thesis |
| 2012 | Karen White | How can technology be effectively used for knowledge management? | DBA thesis |
| 2013 | Robyn Fuge | How can cultural change be sustained in a public sector research and development organisation? | DBA thesis |
| 2014 | Ah Seng Fng | Integrated leadership development programme for construction industry managers in Malaysia | DBA thesis |

TABLE 3: SELECTED EXAMPLES OF SELVA ABRAHAM'S RESEARCH/POSTGRADUATE RESEARCH

| Year | Key Researcher(s) | Publication title | Outcome/publication type |
|-------------|-------------------|--|--------------------------|
| 2014 | Joseph Khan | Developing and implementing a work-applied project management development programme | DBA thesis |
| In progress | Natalie Holyoake | Investigation of a continuous improvement approach using an action research method and action learning process (ARAL) model for effectiveness in the defence industry of Australia | DBA thesis |
| In progress | Paul Jurman | An investigation of the design and implementation of a Telemonitoring program for diabetes patients in a Victorian Health Services Network | DBA thesis |
| In progress | Lisa Mohammed | Investigating the design and implementation of a Work-Applied Occupational Health and Safety model in a Well Workover Company in the petroleum industry in Trinidad and Tobago | DBA thesis |
| In progress | Ang Li Nah | | Masters thesis |
| In progress | Sally Khaw | Developing 5 academic staff as Action | Masters thesis |
| In progress | Khoo Beng Yeow | Action Research supervisors for 7 | Masters thesis |
| In progress | Bong Sze Tci | Continuous Improvement projects at | Masters thesis |
| In progress | Mah Cheng Cheng | Masters level for Epic Valley Holding | Masters thesis |
| In progress | Fng Meow Cheng | Group | Masters thesis |
| In progress | Tang Wai Loong | | Masters thesis |

Commonalities and Differences

Commonalities – Innovation

So what were the commonalities and differences in these two research and postgraduate education processes? In both of them there has been substantial amount of innovation. In the cognitive load program, the research was not just an incremental addition to an already established research stream. Sweller forged ahead in a new direction (Clark, Nguyen & Sweller, 2006, pp. 314-317) without any guarantee that it would lead to anything more than replication of the existing knowledge in learning theories and instructional understanding. There was also innovation when the newly discovered advances, such as integration of pictures and text to overcome the split-attention effects led to poorer learning than separate presentations in some situations, after showing significant learning improvements in previous situations. The problem situations had to be analysed closely and new approaches developed and tested to provide empirical evidence of their value. This is how the redundancy effect was discovered as it inhibited learning (Chandler & Sweller, 1991). Similarly, in the work-applied learning development process a number of the components

of the process had been known for some time, such as action research, action learning, and work-based learning, but they had not been synthesised into an overall program for improving organisational learning and change as was developed in this process. At the same time the nature and characteristics of the relevant component processes, e.g. action research, needed to be more carefully identified (Abraham, 1997, pp. 23-43), and utilised for the purpose of organisational learning and development (Abraham, 2012, pp.11-19).

Commonalities – Leadership

The second common characteristic in these two programs was the nature of leadership. In each case the two leaders set the research agenda, while working within the disciplinary and work contexts of the participants. For example, cognitive load theory was developed in areas where the participating postgraduate students had expertise. Thus there were students who had expertise in mathematics education, science education, computer science education, accounting, music, language learning, etc. The list of postgraduate theses by Sweller's students (table 2) demonstrates the wide variety of learning and instructional contexts in which the development and

experimental work in cognitive load theory took place. However, underpinning the work in all of these various contexts was a common theoretical framework, which allowed developments from mathematics and science education to be used in language learning, music education and English literature studies, and then the new developments in these areas could be cycled back to the other contexts.

In the same way Abraham also set a research and development agenda where a common approach to improving organisational change and learning was implemented in numerous different situations. The participants he worked with may have been part of Indigenous community management teams (Abraham, 1993), public servants following government directives to improve their organisational operations (see the theses by University of Sarawak Masters students in table 3), or managers in commercial businesses seeking to improve their organisational processes (see the theses in table 3) but they all used and explored the development of an organisational and individual research and development process based on the developing action research, action learning and work-applied learning principles and practices.

However, in both cases the clarity of the goals set by the leaders and maintained over decades was an important aspect of the research development process and was an integral part of the research supervision programs. Frequently the leadership involved collaborating with parties outside their own contexts, and this required leadership in developing and managing collaboration, e.g. between international partners, such as Sweller working with researchers in Holland (Sweller, van Merriënboer & Paas, 1998) or in USA (Clark, Nguyen & Sweller, 2006) or Abraham working with the University of Sarawak (see table 3), or with Middlesex University in UK (Garnett et al, 2015). They partnered with industry, for example, to conduct the experiments necessary for the development of empirical evidence for the new innovative theoretical advances (e.g. see Chandler & Sweller, 1991) or to implement practice-specific research and development programs employing work-applied learning processes (table 3). For Abraham partnering with industry was a critical aspect of his role in leading the WAL research program as the credibility of the work in business and management circles is based on industry-relevant evidence of improved practice and value. The leadership in each case was also important in being able to flexibly apply the research agendas to development in fresh new contexts, and in this sense both of the leaders needed to be highly adaptable and willing to explore new spheres of activity.

Commonalities – Use of earlier insights in subsequent research

In each of the research programs the insights derived from the previous studies were then used in later research. However, they were not used in a static replication mode, but new insights were built on the previous work, for example in the cognitive load theory context the research progressed from goal-free problem solving to heavy use of worked examples, to identification and overcoming split-attention and redundancy effects (Sweller, Ayres & Kalyuga, 2011). Similarly Abraham's insights on work-based learning, action research and action learning from his Henley Management College studies were developed and used in his organisational consultancy work

(Abraham, Arnold, & Oxenberry, 1996), work and study of Indigenous community leader development (Abraham, 1993, 1994), work with the Sarawak Masters student program (see table 3) and then work with various postgraduate students studying, applying and extending WAL learning and change programs in their organisations (see table 3 and Abraham, 2012).

Differences – Funding and resourcing

The differences in their activities consisted of different institutional contexts. One was a public university context, the other a consultancy practice which developed to become a private higher education provider. However, despite working in a public university context, Sweller found very meagre amount of institutional support for his research work and he had to work hard to find grants and other support to enable cognitive load theory work to progress. In this situation a significant aspect of the research resourcing was provided by the postgraduate students who were undertaking research in their own organisations or using their own initiative to find friendly research sites, such as schools, which did not cost them excessive amount to access and use (e.g. see Tuovinen, 1999). Thus fund-raising from official sources, such as ARC, as well as from private sources for research, were important enabling activities he had to pursue.

Abraham's work as a private consultant and later working in the context of a private higher education provider fell outside the funding opportunities for public universities. He had no access to ARC, Carrick/ALTC/OLT, NHMRC, RTS or any other Australian public university research funding buckets, so he had to work in partnership with the companies and the individual students who he supervised to creatively develop research funding arrangements. He managed this with a mixture of individual student contribution to the resourcing of their postgraduate research programs as well as consultancy and research support funding from organisations. For example, the resourcing of the doctoral research program by Fng (see Table 3) was funded by Fng himself, and the internal company work involved in the research was funded by the company.

The second aspect of the two different institutional contexts, was the differential availability of the research infrastructure to support research. The University of New South Wales is well resourced in terms of a library, research journals, research program administration and campus facilities. In contrast Abraham had to set up all of these research support and enabling mechanisms as he developed the Australian Institute of Business. They did not exist initially.

Differences – Disciplinary

They also operated in different disciplinary contexts. Cognitive load theory has mostly been developed to facilitate individual learning and instruction, although some of the recent work has addressed group work, e.g. see Endah Retnowati's thesis in Table 2, whereas the work-applied learning has fundamentally involved groups working in action research/action learning modes in organisational contexts. Cognitive load theory is applicable to a broad variety of individual (and now in group) learning contexts, such as schools and tertiary education (e.g. see Tuovinen, 1999) and industrial training (e.g. see Chandler & Sweller, 1991; Clark, Nguyen & Sweller, 2006), without any restriction in principle on what needs to be learned. In

contrast the work-applied learning applies most specifically to organisational learning and change improvement, like the work of managers, where collaborative action research, action learning and reflective practice are used. Thus their contexts of development and application are different but with some possible overlap.

Discussion

What do these two case studies indicate about the development of successful research programs and their relationship to postgraduate education programs?

The first point is the importance of leadership, which has the twin aims of developing a long-term research agenda, as well as involving postgraduate research students in the process. Having these two clear goals in mind, the research program leader can then work to develop the stage by stage development of a research program, while fitting in postgraduate students into an overall program, where they use the prior research developments and make their own contributions to the overall developing agenda.

The importance of the synergy between the research program and the postgraduate research supervision is also highlighted by these cases. The research program agenda was clearly focused in both cases and the postgraduate supervision provision was appropriately linked to the research program. The postgraduate supervisors were committed, active researchers in the area being developed, and thus were able to readily link the students to the overall program. They were also able to assess whether the potential students would fit well into the research program and once they had begun the program work they were able to provide appropriate advice and guidance on the research processes involved.

The leadership aspect also relates to using the strengths the students bring with them to value-add to the research process. Each student brings in valuable new contextual experience and expertise to the research program, often opening up new avenues for the development and testing of the overall program principles or propositions. This has been shown to be an important aspect of both the learning and instruction developments in the cognitive load theory context, as well as in the collaborative organisational learning and change development in the work-applied learning research.

It has become apparent from the review of these programs that easy resourcing for a postgraduate research candidates' research programs that link to a major on-going research agenda is not a given, whether in a public university or in private higher education, especially in non-science disciplines. Both the research program leaders and the postgraduate research supervisors need to be ready to find and develop funding opportunities, which are likely to involve a mixture of institutional sources, for example, in Australian public universities research students are generally able to have their tuition fees waived; research grant sources, such as ARC grants as accessed by Sweller; use students' own resources, such as personal resources and facilities in their workplaces; and industry sources. Both research programs and postgraduate students' experiences have indicated the importance of the

resourcing contributions that industry and students themselves need to be prepared to bring to the table to undertake postgraduate research and make an advance in a particular research program. This also suggests that in the recruitment of postgraduate students there needs to be clarity about the contribution the students need to make to the resourcing of research and postgraduate studies, but which needs to be balanced against the value of the research and qualification to be gained.

The importance of innovation in both an overall research program and in the postgraduate student research is also highlighted by these cases. In each case both the research leaders, working with the postgraduate students and their research collaborators, were prepared to meet blank walls and blind alleys during the progression of their programs with an innovative mindset. Each of the apparent failures was treated as an opportunity for closer analysis, creative thought and trying out something new, rather than as a final disaster. The evidence indicates that this mindset led to continuous, fresh developments and a long-term success for individual postgraduate students as well as the overall research program.

Finally, the long-term commitment of the research leaders to the development of both the research program and the allied research student program has been demonstrated to pay off well in the long term. Stability of the research program and research student support relationship appeared to be an important success factor. In some cases, this has involved maintaining a student-supervisor relationship despite major changes in either person's circumstances. However, in overall terms the better such a relationship has been maintained, based on the experience of these two case studies, the better it has been for both the student's progress as well as for the contributions they were able to make to the overall research program.

Conclusion

So in conclusion we can say that many similar features and characteristics are evident in the two research programs and the way the associated substantial postgraduate programs emerged, despite differences in organisational contexts, availability of funding sources, and the specific research foci of the two programs. The associated research degree programs were important vehicles for the development of the research agendas in both cases. Innovation and leadership, close connection between the research degree program leadership and the research agendas was evident in both cases. In their research degrees the research candidates' expertise, discipline knowledge and contexts were combined with innovative learning theory and practice, where research developments at each stage built on the insights gained from the previous stages and aspects of the research and research degree programs. All of the research and postgraduate research supervision was conducted within international collaborations between enthusiastic innovators focused on the same areas. In both of these cases these key attributes in the research and supervision led to innovative research outcomes for the overall research programs, and to successful and worthwhile research degree completions by the candidates.

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The Other in the Supervisory Relationship – The Third space of Supervision

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Abstract

The relationship between the supervisor and a research student or doctoral candidate is important. However, there are many other relationships that can be meaningful and of use to the student during his or her research. Where there are other practitioners involved in supporting or contributing towards the supervisory effort, the student may form relationships with these practitioners. Unfortunately, these relationships can be experienced as an intrusion in the dyadic relationship between the supervisor and student.

A survey of supervisory practices of supervisors at a South African university showed that practices linked to introducing students into networks were ranked as the lowest among those practices that were considered. Further research explores the experiences of contributors to the supervisory effort. Based on the findings of the research it is possible to use Bhabha's cultural third space model to explore the relationships between students, supervisors and other contributors to the supervisory effort.

Keywords

instructions; formatting requirements

Introduction

The relationship between supervisor and student during the supervision of higher degrees is an area that has received significant attention during the past years. There are also other relationships that might be beneficial to the student and that can contribute towards the supervisory effort. These relationships include those with fellow postgraduate students, other academics, and individuals that provide, among others, statistical support, writing support and support in developing proposals.

Supervisors frequently resent intrusion into the private pedagogical space of supervision (Manathunga, 2005) and anecdotal evidence indicates that specific interventions that are aimed supporting the student are resented especially if this relationship is perceived as dyadic. It is difficult to attribute the resistance and resentment to a single factor. However, there are also indications that some supervisors link their supervisory competence with the quality of their students' work and feel exposed when other academics criticize that work (Vosloo and Root, 2014). The power relationship between a supervisor and student may also be disturbed through other influences and, unfortunately, in some cases supervisors may feel empowered through students' dependence on them and resent any situation where that dependence gets diminished (Vosloo and Root, 2014).

Crossman and Crowther (2014) describe the concept of an informal supervisor, as someone that is involved in the supervisory effort in an advisory capacity. They state that an informal supervisor has no responsibility regarding deadlines or completion (*ibid.*). However, although they might be acknowledged for their contribution, they are 'seldom credited for the success of the student and never receives recognition... for their inputs made to the work' (Crossman and Crowther 2014:2).

It is important to be able to understand the relationships within the supervisory effort, especially within the current context where there are rapidly changing expectations and interventions to support supervisors, students as well as to contribute to the supervisory effort. There are different views on these efforts and Louw and Muller (2014) concluded that any these interventions are just addenda to the supervisory relationship and that the money invested in them can be spent better by appointing more faculty members. A different view, also from a South African perspective is Mckenna (2016) where she presents the benefits and successes associated by using a collaborative doctoral community to enable doctoral students to cross conceptual thresholds.

Context

The South African and institutional drive to increase the number of doctoral graduates increase their success in terms of completion and decrease the time that their research takes has impacted on the need to support both students and supervisors. The SA target of producing 5000 candidates per annum by 2030 (CHET,2016) has been translated into challenging targets at institutional level and within the University of Johannesburg is evidenced in the growth of 12% in doctoral enrolments between 2014 and 2015. The current focus at UJ is on improving the success rate of these students and in specific the time to completion both of which have considerable financial implications for the institution under the South African government's current higher education funding model. This, combined with the shortage of experienced doctoral supervisors in South Africa has increased the number of interventions and support programs introduced at UJ. The establishment of the UJ Postgraduate School (UJPS) in 2015 is a significant step towards providing effectively and efficiently managed resources in improving the UJ postgraduate performance and to serve and support postgraduates holistically through a single, highly

accessible point of contact, thus serving to advance their progress and success.

The predominant model of supervision at UJ remains the traditional 'apprenticeship model' (ref?) and although co-supervision is often used, this is primarily a mechanism to develop early career supervisors. UJ has supported pre-doctoral programs for its staff studying toward their doctorates through the SANTrust programme. The UJPS's Statistical Support and Writing Centre actively supports and contributes to the supervisory effort. The UJPS also provide support to supervisor development through access through formal programs, workshops and forums. Recently UJ has also implemented further and less structured support in the form of mentorship programs such as the Accelerated Academic Mentoring Programme (AAMP).

Conceptualisation

Initially the focus of the research was only on the relationship between the supervisor, student and other contributors towards the supervisory effort. However, it soon became apparent that it is important to look at the relationship within a specific space. Bhabha's cultural third space theory (Bhabha, 1994) was found to be useful as a theoretical lens to explore the relationships involved.

Homi Bhabha is a postcolonial theorist who presented his third space cultural theory within a book on the location of culture (Bhabha, 1994). This theory has not been articulated in a prescriptive manner and has provided a useful conceptual model that has been used in multiple studies within the context of higher education. Whitchurch (2006) focussed on the shifting identities of professional staff in an academic institution and identifies the third space as an emergent territory between academic and professional staff in universities. She also identifies a third space professional as one with blurring and hybrid identities as both professional and academic (Whitchurch, 2006). Subsequently Whitchurch has developed the concept further with the third space as a non-binary space that is semi-autonomous where professionals with hybrid roles can emerge (Whitchurch, 2013). She defines this space as much more permanent, although evolving, than Bhabha who describe the third space as temporal (Bhabha, 1994: 218). Verbaan (2014) explores the third space when looking at the tension between two subcultures within Universities. Jónsdóttir (2016) uses the concept to explore a third space that emerged around a collaborative supervision effort that evolved as a response to the demands of massification.

In this research the first cultural space in Bhabha's theory is defined as the supervision culture that a supervisor regards as his or her original culture, either due to the fact that that was how he or she was supervised and understand the identities, roles, discourse and interactions of the supervisor and student. The definition of a 'private space' as defined by Manethunga (2005) where she explored the response of supervisors when programs are put in place as educational developments for the supervisors is used in this study. She identified that supervisors resent what they see as intrusions into a private pedagogical space and even describe these interventions as based on colonial underpinnings (Manethunga, 2005:18). This link to Bhabha's postcolonial theory is particularly important, especially

as many of the interventions and programs to support the supervisory effort are based on similar university management agendas. It also resonates greatly in South Africa where there is a strong push by students and other actors on management to de-colonise the University as an institution.

The second space is conceptualised as the institutional space where, as previously mentioned, an apology to the colonial culture that Bhabha described as a second space can be drawn. The institutional culture is informed by issues such as quality, success rate, efficiency as well as the drivers towards massification of higher degrees. There is often a lack of cohesion and clear articulation of the supervision culture in universities. Supervisors are also experiencing conflicting messages from the institute regarding the expectations and what is valued around supervision (Cilliers, 2013).

The third cultural space is the hybrid space that emerges when individuals from a cultural first space is expected to function within the second cultural space. As a result of a compromise due to perceived irreconcilable differences, a third space is where the individual(s) incorporate certain aspects or characteristics of the second cultural space into this third cultural space. Within the third space there is a tension as a result of the continuous negotiation on the differences between the cultures of the first and second spaces (Bhabha, 1994:218). Bhabha refers explicitly to the 'innovative energy of the third space' (Bhabha, 1994: 220). It is also important to note that Bhabha also identified that the third space can be quickly reabsorbed into the first space (Bhabha 1994:221).

Method

In this research the 2015 institutional *Postgraduate Student Experience Survey* (Fourie, 2015) and a survey that provided self-reported practices of UJ supervisors was used to provide the quantitative information. The experiences of contributors to the supervisory effort regarding the supervisor's attitude to 'the other' in their relationship with their students as well as the experiences of the contributors whilst contributing to the supervisory effort were then explored.

Supervision at UJ

In the 2015 *UJ Postgraduate Student Experience Survey* (Fourie, 2015) current and recently qualified postgraduate students were asked to rate their experience as postgraduate students. In this survey some items that could be linked to others in the supervisory relationship were evaluated. These were reported against a six-point scale. One was rated as strongly disagree and 5 was rated as strongly agree. The final option was a 'does not apply' but this item was treated as a missing value for the analysis. The following relevant items were rated (mean value for doctoral students, N 173, in brackets):

- My department provides opportunities for social contact with other research students (3.49);
- My department provides opportunities for students to become involved in the broader research culture (3.56);
- I was integrated into my department's research community (3.46);
- My department provides a good training programme for postgraduate students (3.46);

- I tend to feel isolated within the department/faculty (2.58), and;
- Overall, I am satisfied with the quality of the services and support that I have received from the UJ (3.65).

The means of most of these responses rate between neither agree nor disagree and tend to disagree, with only the item regarding isolation (rating a negative experience) being rated slightly towards tend to agree. It seems that postgraduate students, and in this case the doctoral students, are not integrated into a scholarly community.

Despite this the survey reports that students are satisfied with the supervision received, 86% of research master's and 84.6% of doctoral agreed that they were satisfied. It was also found that 30.8% of all doctoral candidates have selected UJ based on supervisor reputation.

The following results were also obtained regarding doctoral students at UJ in the *Postgraduate Student Experience Survey* (Fourie, 2015):

- 40.9% have a single supervisor, 50.1% have a supervisor and co supervisor and 2.9% have a panel or multiple supervisors;
- 15.9% of students have had their supervisors changed during their studies and 14.6% of these changed more than once, and;
- 40.7% of the changes in supervisor were due to the retirement or resignation of a supervisor
- On average students spent 39.9 hours on their studies.

Practices of Supervisors

In order to describe the supervisory practices of supervisors at UJ, a survey was done. The survey was based on a survey used by Hammond et al (2010:76). As part of this survey a list of 40 practices were given and respondents were asked to respond on a 4-point scale that measured frequency. The survey was sent to 1625 academic staff members at UJ and a total of 219 responses were recorded. Of these 137 were complete and 82 were incomplete responses. For the purpose of this analyses response were removed if the survey was not finished (i.e. click submit) or if the respondents did not complete any one of the first three questions. Therefore, 179 responses were analysed.

Both postgraduate and undergraduate supervision was included and the survey was not limited to active supervisors. However, based on the responses it can be assumed that 78.8% of the respondents are currently supervising and that 69.3% of the respondents have successfully completed a supervisory process.

The responses were ranked by using Z to percentile against a benchmark of 80% as this gave the best discrimination. All practices that were ranked below 0.4 were regarded as low frequency practices. When these low frequency practices are listed (from the least frequent), the following practices were identified:

1. Introduce your students to professional networks (0.177)
2. Encourage your students to network within your university (0.191)
3. Periodically review your how you supervise with your students (0.269)

4. Assist your students to progress their career goals (0.281)
5. Direct your students to leading researchers (0.299)
6. Advise your students on opportunities for relevant experiences (0.348)
7. Promote good interaction between your students and other students in the research area to encourage improved learning (0.352)
8. Critically discuss your research practices with your research students (0.382)
9. Keep your students informed about issues related to intellectual property rights (0.388)
10. Assist your students to obtain resources for engagement with the wider academic community (e.g. through seminars and conferences (0.392)

In the 40 items used, there are five that can be seen as involving someone else in the relationship. All five of these items are among the least preferred activities and are at position one, two, five, seven and ten. One other option that might get students expose to more views is at position thirteen from the bottom. This item is given as: Help arrange for your students to present their research (e.g. at seminars and conferences) and is rated at 0.434 on z to percentile. From the results obtained in this survey it is clear involving others in the supervisory relationship is not really part of the supervisory culture at UJ.

Experiences of Contributors to the Supervisory Effort

Based on the results obtained from, in depth interviews with highly experienced individuals that are involved in supporting the supervisory process were done. The participants were involved with: statistical support (S1), academic literacy support (W1) and support in developing doctoral research proposals (P1, W1). After the interviews and initial content analysis a member checking was done with one of the participants that had been involved in programmes and programme management where 855 doctoral students have been supported in proposal development. Both authors have also been extensively involved in various interventions aimed at supporting the supervisory effort and provided further information through reflection and self-reporting and this informed the final analysis of the exploratory work (A1, A2).

Statistical Support

The findings from the perspective of statistical support were as follows:

- Supervisors mostly appreciate this support as they are comfortable to state that they do not know everything about statistics;
- Practitioners that do this support are regarded as professionals and often have doctoral degrees and are recognised as academics;
- Students who are 'quite cross' (S1) with their supervisors often vent during consultations;
- At UJ it is expected that the supervisor is aware of obtaining the support and some supervisors, especially in management and economics, insist that students obtain support;

- Although the focus and expectation of supervisors are that the support is mostly at analysis level – it is often very conceptual and inputs are from problem formulation through to analysis;
- Care must be taken in communicating with the students that there are different perspectives and that the view of the statistical support practitioner and the supervisor might differ;
- As far as possible, supervisors should be kept in the loop and must know that the student are obtaining support, attend sessions if possible and be included in any email communication, and;
- The practitioner had no real negative response from supervisors and although they are sometimes irritated they do not really show it - 'Although I sometime wonder' (S1).

Writing Support

The findings from the perspective of writing support were as follows:

- Supervisors all believe they should be able to do writing support 'but they send their students because they do not have time' (W1);
- Writing support is often done by graduate students or staff members that are not appointed as academic staff and there is not much recognition of them as academics or professionals;
- 'Just because you can write does not mean you can teach it' (W1) but all supervisors believe they can teach writing;
- Writing is often perceived as something that needs to be 'polished' and not at the centre of the research and supervisors may resent more specific input;
- There are concerns if the supporting individual does not have the appropriate epistemological and disciplinary background;
- If writing support is seen as generic, supervisors resent inputs that may be from a different background and do not fit into how writing is done in the specific context;
- But – even if academic literacy is imbedded in proposal development, supervisors may distrust requests for sample articles to inform the writing support practitioners, and;
- The best way to is to capture all feedback and to follow a meeting up with an email to student and copied to the supervisor.

Support in Proposal Development

The findings from the perspective of support in proposal development were as follows:

- Candidates for a major intervention for UJ staff members were nominated by the deans with little input from supervisors;
- Supervisors were involved in the particular intervention and a parallel session for supervisors of candidates was held but unfortunately many did not participate;
- From feedback in the case of the UJ intervention, as well as similar interventions at other universities indicate that some supervisors resented the implication that they need to be taught to supervisors;
- In many cases the students did not engage with supervisors regularly through the process to incorporate learning;

- Very few incidents of direct negative feedback were received from supervisors – mostly through students in 'Chinese whispers' or in institutional for a;
- International facilitators that came from a different culture regarding supervision caused negative reactions in the South African supervisors (heard through students) – 'Not how we do it here' (quoted from responses by supervisors);
- Supervisors often stated that the different views that they were exposed to confused the students, especially the weaker students;
- Different supervisor experienced it differently- when students completed- supervisors expressed significantly different views – some felt that the students overestimated their progress or that they had to redo everything from the start;
- Supervisors that were stronger in the general research design were the most comfortable with facilitators providing feedback to their students, and;
- 'Now that I am a supervisor as well I would hate it if I was excluded if my students were involved in such interventions' (P1).

Overall findings

The overall findings of the research are as follows:

- Doctoral candidates report that practices that would lead to inclusion into the academic community and the forming of stronger relations with individuals that are not their supervisors do not happen;
- Supervisors self-report that facilitating wider academic contact for students is the least important practice given as options (2.63 on a 4-point scale);
- Supervisors self-report that practices that involve other people in the supervision effort are among the least likely among 40 practices surveyed (all five practices rate under 0.4 as calculated according to z to percentile against an 80% benchmark);
- Statistical support is not resented by those recommending it to their students and the individuals providing the support are seen as academics and professionals – this affect how supervisors regard their input;
- Writing support is seen as only necessary because supervisors do not have time or the inclination to 'fix problems' and the practitioners providing this support are not regarded as professionals or academics – this also affects how supervisors regard them;
- Both writing support and statistical support may be conceptual although it is not perceived as conceptual;
- Proposal development is difficult area as it is experienced as conceptual by the supervisors;
- A wide range in supervisors' responses and intrusion is experienced regarding support in proposal development;
- Supervisors' responses are seldom heard directly by contributors to the supervisory effort, it is mostly heard second hand through students and university academic and management for a;

- Where input is given by individuals that came from a different culture around supervision what and how they offer it is often resented;
- The wider disciplinary or epistemological awareness of the contributors in the supervisory effort affect the perceived usefulness of the input and lowers the likelihood of confusing the student;
- Well-developed supervisors tend to react more positively towards input by other contributors to the supervisory effort;
- The way that those that contributes to the supervisory effort acts and respects the supervisor student relationship informs how supervisors react;
- The institutions do not often have a clear and cohesive culture that informs its expectations of what the supervisory relationship and the contributions of others into the supervisory effort should be, and;
- The way that the institution positions and communicates the role of interventions informs how supervisors react.

The Third Space

It is clear from the findings that a hybrid third space is emerging where supervisors take on what they regard as useful from the second, institutional space. A hybrid culture develops in which the supervisory relationships, identity and discourses are different from that that could be regarded as their original culture(s) regarding supervision as shown in Figure 1. In fact, there are different third spaces forming, possibly due to the variety in the first cultural space that is relevant to specific supervisors as well as different well established supervisory cultures that exists in specific departments or research groups.

The fact that the institution does not have a cohesive or clearly articulated positioning of what it expects the supervisory culture should be and what practices are expected from supervisors also creates a wide range of third cultural spaces. In fact, the dissonance and ambiguity created by the lack of a clearly articulated and lived culture also affects the formation of the

hybrid third space, as supervisors are not clear regarding what is useful and essential and should be incorporated into the hybrid space. This results in many of the 'third spaces' being virtually undistinguishable from the initial first cultural space.

The need for growth in student numbers, throughput, efficiency, increased supervisory load and the acceptance of students that are not ready for higher degrees all influence different elements and practices of the institutional supervisory culture. The continued effect of massification of higher degrees makes it essential that supervision practices need to change to improve efficiency. The intention to offer qualifications with international universities where there are different cultures regarding supervision, different models of supervision and different role expectation introduces further complexity into the cohesion and articulation of a transparent, clear and cohesive supervision culture within South African universities, including at the University of Johannesburg.

The contributors to the supervisory effort appear to be functioning within the third space by respecting the primary relationship between the supervisor and student. They are also somewhat resigned to the fact that they will be treated as informal contributors to the supervisory effort whose contributions will never be recognised. However, there is a real difference between an unrecognised contributor and someone that is seen as an addendum that could be replaced by more faculty members.

Recommendations

Looking at the supervisory relationship through the lens of Bhabha's cultural third space theory is helpful to understand the relationships within the supervisory effort. It is also useful to guide policy and practice development. Based on the exploratory work done so far the following recommendations can be made:

- Development of supervisors is critical as well developed supervisors are both abler to provide meaningful supervision and are more accepting of contributions by other practitioners that can enrich and contribute to the supervisory effort;

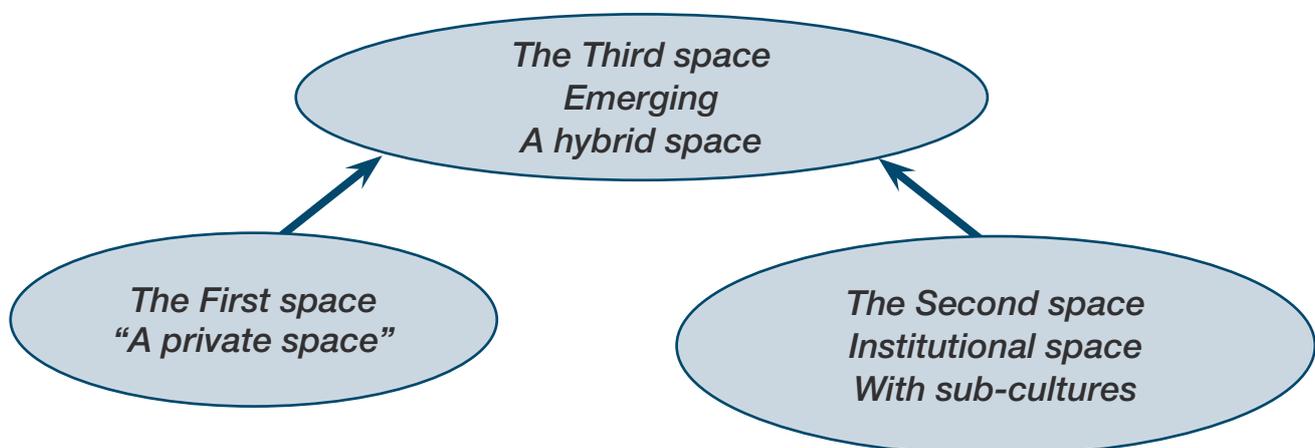


Figure 1: The emergence of a third space regarding supervision culture

- Awareness of those that provide support to the supervisory effort regarding how to approach the situation is important and until there is a third cultural space that is more accepting of and value contributions more it is essential to maintain that awareness;
- Working towards the creation of a professional and academic identity of the necessary others in the relationship and contributors to the supervisory effort is important;
- It is essential to ensuring that support and contributions are useful and perceived as such by the supervisors;
- The support and contributions offered must be discipline and epistemologically relevant and appropriate, and;
- The institution can affect the nature of culture forming in the third cultural space by bringing cohesiveness in its second space culture and this includes policy development.

Conclusion

The research reported on in this paper is the initial exploratory part that will inform a structured research project at the University of Johannesburg. The findings so far can be incorporated into the current conversation and policy development at UJ. It is necessary to extend this research to deepen the understanding that we have of the relationships in the supervisory effort as well as the nature and diversity of the current third spaces that has emerged.

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Set for success but are we on the right track

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Abstract

Whilst all universities aim to improve graduate research outcomes, they may use very different strategies to achieve this. Quality of research training programs is not solely dependent on good supervisory practice and skills training programs. Many other factors contribute to the effectiveness and efficiency of research training provision within a particular institution, faculty or school. Governance and management structures, models of administration, progress reviews, performance monitoring and ways of communicating, all impact on the experience that a candidate has and contribute to graduate research success rates. But how can a university or organizational unit know if its structures, systems and support are doing what they want them to do? What data should be sought to determine if the university/faculty/department are providing the best possible services to their candidates and supervisors and if they are on track for success? How should these data be collected, used, analyzed and promulgated? The authors have conducted many reviews of research training provision in a number of universities, both in Australia and overseas, and present a case for regular collection and review of research training data both at departmental and institutional level. This paper draws on experiences in small and larger institutions, both research intensive and evolving, to explore various methods of evaluating the efficiency and effectiveness of graduate research support and governance. It discusses data sources that may be helpful when conducting a review, gives a short checklist of 'Do's and Don'ts' of organizational reviews of graduate research programs and concludes with three case studies.

Keywords

comprehensive reviews; research degree data; light-touch reviews; performance metrics; performance monitoring

Introduction

Australian universities typically strive to improve their graduate research outcomes, particularly the number of candidates who complete their degree, given that half the government

funding for places and scholarships is purely dependent on completions. New programs and initiatives are introduced in the expectation that they will not only enhance the experiences for candidates and produce work ready graduates, but also that they will improve the bottom line – completions. Unfortunately, there is a long lag between the introduction of a new development and its ultimate effect on completions. It can be six or more years since inception for a new initiative to have an effect on completions. So how can we be sure we are on track with the new initiative and that there are no unintended consequences?

Between the three of us, we have more than 50 years' experience in leading, governing and administering university-wide graduate research programs. We have witnessed both successes and failures when it comes to monitoring and reviewing graduate research programs. Based on that collective experience, we present our recommendations on how best to monitor and review programs and initiatives.

Our recommended system involves three components:

1. The development of a suite of performance indicators,
2. A light-touch review based on these performance indicators on an annual basis, and
3. Comprehensive reviews involving outside experts every five to seven years.

We note that such a system, if implemented appropriately, would comply with the Australian

Government 2015 Higher Education Standards to be introduced in 2017, which require that

'All accredited courses of study are subject to periodic (at least every seven years) comprehensive reviews that are overseen by peak academic governance processes and include external referencing or other benchmarking activities.'

and that

'Comprehensive reviews of courses of study are informed and supported by regular interim monitoring, of the quality of teaching and supervision of research students, student progress and the overall delivery of units within each course of study.' (Commonwealth of Australia, 2015, Section 5.3.)

The plan of this paper is as follows. The next section discusses the use of performance metrics in monitoring a graduate research program. The third section introduces the idea of using a selection of performance metrics to conduct light-touch reviews. The conduct of comprehensive reviews is the topic of the fourth section. Two case studies on the use of data to help drive improvement are presented in the fifth and sixth sections. These involve analyzing student satisfaction surveys to provide a ranking of academic units within an institution and using supervisors' records of supervision to help identify potentially poor supervisors. A third case study on the use of benchmarking instruments to identify areas for improvement is outlined in the seventh section. The final section contains some concluding remarks.

Performance Metrics

It is widely accepted that system improvement first requires some form of system measurement that then allows monitoring the impact of changes (see for example Walton, 1986, Chapter 20). Such performance metrics provide evidence of improvement or lack of improvement after a change. What is measured therefore needs to be meaningful in terms of the aims of the system. It is also helpful to look for and monitor metrics that could be regarded as leading indicators of change where there are large lags in time before improvements in the ultimate desired outcomes can be demonstrated and measured.

In our case, we would expect a graduate research program to be working well if it has the right students, in the right programs with the right supervision and support. How would we know if this was the case?

Early indications can come from performance metrics that all stakeholders agree can be interpreted as indicators of the success of the program. In order for these measures to play their role, they need to be:

- i. clear and valid;
- ii. understood and accepted by all stakeholders; and
- iii. accessible (i.e., can be monitored and analyzed by the academic unit as well as central administration).

It also helps if these performance metrics are relatively robust in the sense that their values are not affected dramatically by the results for one or two students. It therefore is important that these metrics measure the attributes of a moderate to large cohort of students, say 20 and above. If they are to be used for smaller cohorts, then this issue needs to be acknowledged when interpreting the data.

A further consideration is how the values of such performance metrics might be given a similar interpretation by all stakeholders. A solution is to have some benchmark metrics against which the academic unit's metrics can be compared, acknowledging disciplinary differences if they are relevant. For example, it may be appropriate to compare the proportion of students withdrawing in the first two years of a chemistry program with the same proportion for the institution as a whole or for an aggregation of STEM disciplines in the institution but an argument could be made against comparing the proportion of international candidates in engineering and philosophy. It can also be valuable to benchmark data across like institutions or faculties/schools/departments.

Suggestions of metrics worth considering as indicators of success are:

Right students

- i. admissions, load and enrolments with pre-determined targets as benchmark;
- ii. proportion applications that get offers of a place;
- iii. proportion of offers of a place that get accepted;
- iv. proportion of acceptances resulting in enrolments;
- v. proportion of scholarship acceptances;
- vi. proportion of full-time students;

- vii. proportion of enrolled students with first class honors (or equivalent) in qualifying degrees;
- viii. proportion of new students with an already existing research paper.

Right programs

- i. proportion of on-time confirmations;
- ii. proportion of withdrawals by the end of year 1, year 2 etc.;
- iii. proportion of students transferring to other programs;
- iv. proportion of thesis submissions on time;
- v. completion rates after x years;
- vi. proportion of students who are required to revise and resubmit their thesis;
- vii. proportion of students satisfied with the program; (viii) number of grievances and complaints about the program.

Right supervision and support

- i. proportion of overloaded supervisors;
- ii. proportion of supervisors with a high ratio of separations to completions;
- iii. proportion of students happy with their main supervisor;
- iv. proportion of students happy with their supervision team;
- v. number of grievances and complaints about supervision or support; (vi) number of appeals against academic decisions.

When tracking whether a program has the right students, it is helpful to know what the characteristics of desirable students for the program are. For example, there is evidence in a range of disciplines and institutions that full-time students are more likely to complete than part-time students. Those who have already published also have a better chance of completing than those that haven't.

The above lists are long and we don't advocate that all these metrics be looked at. If there are too many, different stakeholders will tend to prefer those that are more relevant to their view of the world. It is therefore important to choose and to focus on a manageable number of diverse performance metrics that relate to the stated priorities of the institution. Meaningful and widely accepted benchmark metrics should be identified for each metric.

Annual light-touch reviews

Our recommendation is that the selected performance metrics be calculated and reviewed on an annual basis at a meeting with stakeholders. In effect this would be a light-touch review of the program in question.

It is helpful if the various stakeholders receive the data well in advance of the meeting. Hopefully, any questions or disputes about the reliability of the data would be resolved before the meeting.

For each performance metric, there are two benchmark values. These are the chosen benchmark measured for a much wider cohort than that under review and the value of the metric for the program in the previous period or periods. Looking at metrics over a time series of observations does help in assessing trends

against a background of volatility in the metric. Small changes could just be randomness and therefore should not be regarded as being significant.

Outcomes of the review might include:

1. noting all is well with the program;
2. noting which elements are working well;
3. noting particular elements that need watching in future;
4. noting particular elements that need action; and
5. making recommendations for changes to be considered.

As these reviews discuss and interpret the performance metrics, they should also identify opportunities and strategies for improvement and have a proactive rather than punitive focus.

Our do's and don'ts for such reviews are:

Do

- i. choose a small and appropriate set of metrics that address your institutional priorities;
- ii. engage stakeholders in setting area specific targets/benchmarks;
- iii. ensure that data is accurate, sound and reproducible;
- iv. triangulate findings;
- v. celebrate success and share best practice;
- vi. collaboratively plan strategies to improve;
- vii. where appropriate, report results broadly along with planned remediation strategies.

Don't

- i. gather data until you know what you are going to do with it;
- ii. compare non-equivalent data;
- iii. present it as a punitive process;
- iv. blame (do share the problem and capacity to solve);
- v. review performance unless you have the capacity to make a change.

Comprehensive reviews

Comprehensive reviews have become a time honored process for monitoring and improving academic programs. They typically involve the appointment of a review panel, terms of reference, a call for submissions from stakeholders, a self-review document, a selection of performance metrics with benchmarks, interviews by the panel of various stakeholders and a review report. They require high level support within the institution (senior endorsement and announcement), an appropriate commitment of resources to allow the review to proceed in a timely manner and the commitment of members of the academic unit to the process. The panel should have a number of external members with an independent chair. Some of the external members should be chosen because of their experience and success in running similar programs at other institutions so they know what a successful program looks like. A plan and timetable with dates for key deliverables needs to be drawn up well in advance of the review.

The aim of the panel is to investigate how the program is going by reading the review document, analyzing the performance data and questioning academic leaders, supervisors, support staff, graduates, students and in some cases employers of graduates. The panel is asked to identify strengths and weaknesses of the program and to make suggestions for improvement. Because of the resource intensive nature of these reviews, they are typically only conducted every five to seven years.

This external review method can also be used to investigate a particular element of program delivery and support or instigate and support a new initiative or development. Rather than focusing at graduate research program level a review panel (or single reviewer) could be engaged with a narrower academic or operational focus. Targeted reviews that the authors have been involved include evaluations of:

- research masters programs,
- support available to graduate research candidates,
- programs within a particular college or faculty,
- support for international candidates
- compliance with Commonwealth and other relevant legislation and standards, and
- HDR governance and administrative structures.

The following are our do's and don'ts for running comprehensive reviews:

Do

- i. have high level sponsorship for any organizational/external review;
- ii. be clear about the scope of the review;
- iii. gain agreement and socialize the terms of reference;
- iv. choose panel members who can provide the expertise and perspectives required for these purposes;
- v. consider at least one expert external to the organization;
- vi. refer to performance data and targets considered as part of regular ongoing reviews;
- vii. consult broadly;
- viii. choose consultation strategies relevant to the various stakeholders (calls for submissions, focus groups, individual interviews);
- ix. produce a report of findings sooner rather than later;
- x. seek recommendations for action;
- xi. develop an action plan and timelines related to these actions;
- xii. review and report on consequent changes within a specified timeline.

Don't

- i. have the unit under review manage the review process;
- ii. assume that the standard 'coursework program' organizational review structure will work for research programs;
- iii. seek wholesale change on the basis of little evidence;

- iv. pre-empt the findings of an external review;
- v. rely on one-off reviews – they must be supported by regular and ongoing performance monitoring.

Case study I: Using student surveys to drive improvement

From 1994 to 2012, all research graduate students at Monash University were surveyed on the quality of the supervision and support from their academic unit. The early surveys were conducted every four years with more recent surveys being every two years. Questions were positive statements that one would expect students to agree with in a perfect world. *Monash University's Code of Practice for Supervision of Doctoral and Research Masters Students* was used to guide the selection of statements. Respondents were asked whether they (i) strongly agreed, (ii) agreed, (iii) were undecided, (iv) disagreed or (v) strongly disagreed with each statement. Not all questions were of equal importance which lead to a decision to focus on seven key questions on supervision and seven key questions on academic unit support.

It is important not to have a survey like this damage the relationship between student and supervisor. As a consequence, results for an academic unit were only reported back and used in the subsequent analysis if there were eight or more respondents. Because of a desire to aim for no (zero) students expressing disagreement with any of the 14 key questions, the percentages of respondents who disagreed or strongly disagreed were aggregated over the 14 questions to give a score for each of the academic units with eight or more respondents. This was used to provide a ranking of academic units across the university with typically 40-50 being ranked. For a more detailed description of the initial survey, see King (1996).

After analyzing the results of each survey, reports were written for each faculty dean, giving the rankings for academic units in their faculty and highlighting areas for improvement. For most faculties, there were academic units that performed relatively well and units that performed poorly in cognitive disciplines, so it was difficult to argue that discipline differences were to blame for a poor ranking. The top half of the ranking was made public and the bottom half remained confidential. After each survey, the top ten academic units were invited to share the reasons why they thought they performed so well at a celebratory lunch.

The first survey in 1994 revealed a large discrepancy between academic units, with the best unit having an average dissatisfaction of 1.7% while the worst ranked unit had an average dissatisfaction of 36.4%. When poor relative performance was brought to their attention, most academic units decided to do something about it. The results from different questions allowed the pin-pointing of areas for improvement. Eight years after the first survey, the average dissatisfaction of the worst ranked academic unit had more than halved, dropping from 36.4% to 15%. In addition, each new survey saw the average dissatisfaction levels for the university as a whole continue to drop from the level of the previous survey. It was very heartening to see the bottom ranked department in 1994 become a top ten department in 2002.

Case study II: Using data to identify potentially poor supervisors

It is widely regarded that poor or inadequate supervision can be a major cause of research graduate students not completing their degree. Consequently, there have been many calls to protect students from poor supervisors. How to identify such supervisors in a fair and meaningful way is a difficult task? Surveying each supervisor's students is not recommended because of the small numbers of students involved leading to the possibility that either the students would be reluctant to respond truthfully or the supervisor-student relationship could be damaged by the supervisor learning of the survey outcomes. Our proposal is to use the supervision history of a supervisor in order to identify whether there may be a problem worth investigating further.

The nub of this approach is that each supervisor has students assigned to him/her from time to time and it is instructive to look at the pattern of what happens to these students. Some may successfully complete which is clearly the most desirable outcome. Others may switch to new supervisors, change to a different degree or institution or just 'drop out'. In each case the student has separated from the supervisor. We call these latter separations, unsuccessful separations. Some of these unsuccessful separations may be caused by poor supervision and others may be caused by factors beyond the control of the supervisor. If there are too many unsuccessful separations occurring, then the suspicion is that there is an element of poor supervision driving these outcomes.

The idea is to look at the ratio of unsuccessful separations to total separations for supervisors who have had a meaningful number of separations, say eight or more. This ratio will be a number between zero (all separations are successful completions) and one (all separations are unsuccessful separations). For an institution, there will be a wide variability in the values for this ratio for the cohort of current supervisors. One approach might be to look at the supervisors with the largest values of this ratio (say the six largest in the institution) and investigate why their ratio is so high. There may be an innocent explanation such as the person being assigned as the supervisor for all new masters students until they have their thesis topic decided and a more permanent supervisor(s) assigned. Therefore, each supervisor who gets identified in this manner needs to have his/her supervision record looked at in detail by a graduate research coordinator or equivalent. Are there unsuccessful separations that are clearly beyond the control of the supervisor? If so, these need to be discounted in any assessment of the supervisor

Then might follow a meeting with the supervisor and if the supervisor agrees, interviews with the supervisor's students. If it is deemed there is a problem, then a temporary freeze on new supervision assignments might follow together with the development of a *Performance Development Plan* for the supervisor which may include a course of training and the appointment of a supervision mentor. At the end of a prescribed period (such as six months), a further round of interviews might be undertaken to determine whether the temporary freeze can be lifted or whether the *Performance Development Plan* needs to be extended for a further period. It is important that

the interests of the students currently being supervised by the supervisor in question be protected. In particular, it is desirable that their current supervision arrangements stay in place, with the exception being when the student requests a change.

Case study III: Assessing and benchmarking against quality standards

Comparing how an institution conducts its research programs against a set of agreed standards will also inform and support improvements that translate to better graduate outcomes. *The Australian Graduate Research Good Practice Principles* (Australian Council of Graduate Research, 2015) articulate the program elements considered essential for the development of graduate research programs and are noted as reference points in the 2015 Higher Education Standards Framework. These Principles, or the aligned Edith Cowan University (2012) *Good Practice Framework for Research Training*, can be used as a structured means of reviewing and evaluating graduate research practices, policies and procedures.

The University of Melbourne also developed a benchmarking instrument to identify areas of good practice in graduate research education across different institutions and countries, and thus identify areas in which improvement was needed. The survey instrument was based on standards outlined by the Higher Education Funding Council of England in its May 2003 consultation paper 'Improving standards in postgraduate research degree programs'. The standards covered the major areas of policies, procedures and outcomes that underpin good practice in the provision of graduate research education. The format allowed participating institutions to identify their areas of strength and weakness. Benchmark standards were set for: selection, admission, enrolment and induction of students; initial review and subsequent progress; examinations; supervisory arrangements; development of research and other skills; feedback mechanisms; institutional arrangements; research environment and appeals and complaints.

Conclusion

Determining whether a graduate research program is on track can be difficult, in part because of the long lead times from initial enrolment to final graduation. In an era where data is more plentiful and easy to gather, a suite of well-chosen performance metrics can be very helpful in effectively monitoring a graduate research program. There is no one right set of metrics for all disciplines and institutions. Their choice should be informed by the stated priorities of the institution, faculty and department. They should be understood and accepted as valid measures by all stakeholders, easily accessible and reasonably robust.

Such data does need to be appropriately interpreted and that is why benchmarking and reviews, either light-touch or comprehensive are important. Reviews are also designed to produce recommendations for improvement based on the evidence presented to them. In our experience, reviews are most effective when appropriate data with benchmarks are provided as background.

The case study involving a simple analysis of regular student satisfaction surveys shows the power of internal ranking/benchmarking to bring about institutional-wide improvement.

Even the thorny issue of identifying poor supervisors can be assisted by the use of suitable metrics, although in this instance it is vital that the data be carefully interrogated and interpreted before any conclusions are drawn.

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