Designing an innovative system to evaluate a postgraduate supervision support and development framework

Kevin Petrie, Malcolm Anderson, Kayle de Waal, Brett G. Mitchell, Maria Northcote, Anthony Williams
Avondale College of Higher Education
Janet Carton
University College Dublin

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:

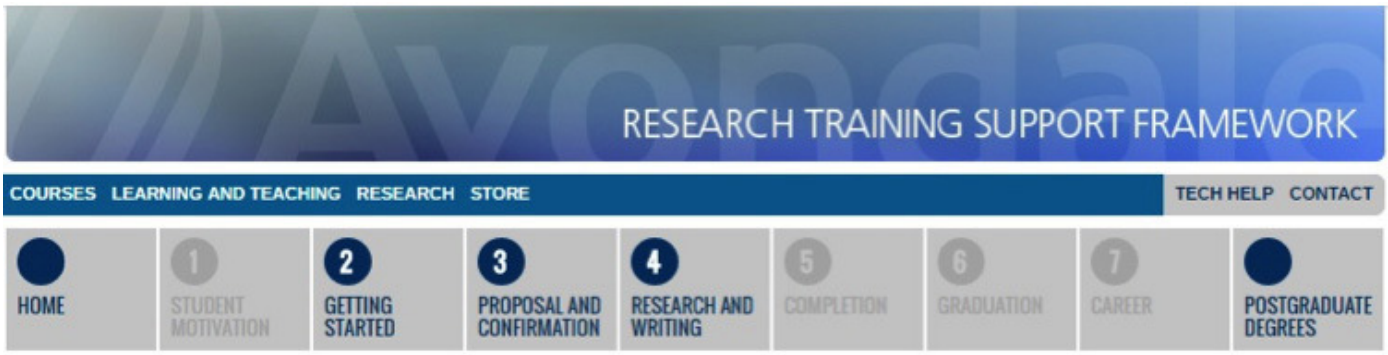


Figure 1: Header of Avondale's Research Training Support Framework site http://www.avondale.edu.au/research-training/

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.

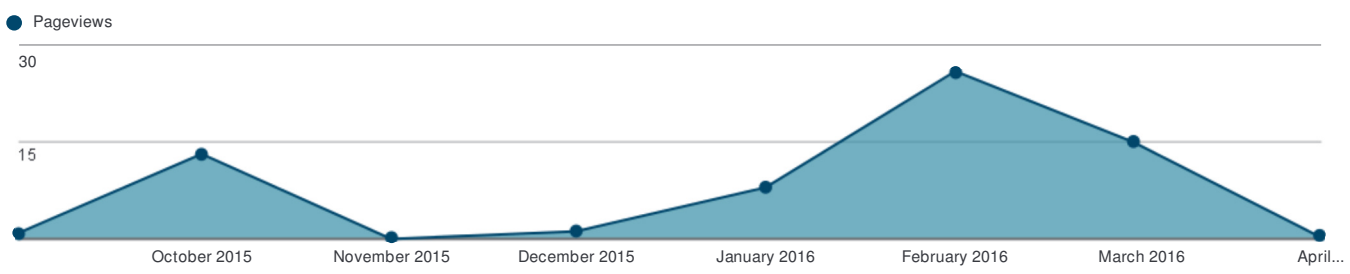


Figure 2: Staff Accessing Framework Site

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	South□eld

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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