# Critical interactions shaping early academic career development in two higher education institutions

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This study was aimed at identifying the critical interactions within work environments that support the development of early career academics as researchers in institutions with lower order research profiles, that is, environments that differ from research-intensive universities. Ten early career academics, five from Australia and five from the UK, were recruited. Multiple sources of data were subjected to a qualitative analysis from which five interrelated themes identified the features of the research journeys: *institutional environment, individual attributes, postgraduate and other research training, supportive interactions with others,* and *outcomes from the research process.* A key finding was that individuals differ in their need for redirection, support, challenge, and inspiration which may be important at any time but especially at turning points in their career. Actions that might be taken by those responsible for implementing plans and programs in professional learning and development for early career academics are outlined. This study offers empirical evidence of the changes that are significant for individual neophyte researchers, and the environments and interactions that influence these changes.

## Background

The global higher education landscape has changed markedly during the past two decades, and this has been especially evident in Australia (Coates, Dobson, Goedegebuure, & Meek, 2009; Freebody, 2010; Watty, Bellamy, & Morley, 2008) and the UK (Brown, 2011; Browne, 2010; Collini, 2012; Lucas, 2006) where forces of consumerism, entrepreneurialism, and performativity have been at play. A shifting of the landscape by these forces, and others, has meant that research endeavours and the performance of researchers has been scrutinised more heavily (see, for example, Billot, 2011; Evans, 2012). To illustrate, both the Australian and the UK higher education sectors use research excellence frameworks or research assessment exercises to rank institutional performance (Australian Government, 2012; Higher Education Funding Council for England, 2009, 2011). It has been argued that the advent of these particular exercises has had a direct bearing on the decisions and practices of individual academics, as well as the policies formulated by institutional leaders and line managers to influence academic practices (Hardy, Heimans & Lingard, 2011; Oancea, 2010; Sikes, 2006). Among the many early career decisions that academics make are those concerned with research trajectory and how likely they are to be successful in following this trajectory in their current situation. The latter consideration may be particularly important if they perceive a significant gap in resources, opportunities, and status between institutions that are research-rich and those that are research-poor (Hazelkorn, 2004).

Although the most recent research pertaining to researcher development has opened up territory by providing frameworks for discussion and analysis (see e.g., Åkerlind, 2011; Evans, 2011; Hemmings & Hill, 2009), there are few studies that offer empirical evidence of the changes that are significant for individual researchers and the environments and interactions that influence these changes. Of those studies, nearly all have been conducted in well-established research-rich institutions (see, e.g., Åkerlind, 2005).

In general, the current literature suggests that for individual academics to embark on a research-oriented career they have to expect that they will be successful as researchers, that this success will enhance their respective careers, and that these careers will be fulfilling. Expectation of success has been shown to strongly relate to measures of research self-efficacy (see, e.g., Bieschke, 2006; Vasil, 1992). Research self-efficacy refers to an individual's confidence to successfully perform tasks when conducting research (Forester, Kahn & Hesson-McInnis, 2004). Factors that contribute to the strengthening of self-efficacy beliefs in relation to research include suitable graduate studies background, effective mentoring, and working as a part of a productive research team (Debowski, 2012; Sutherland & Petersen, 2010).

In some more research-intensive institutions, the many experienced and/or senior academics in the workforce that would be expected to provide valuable mentoring and professional development opportunities are nearing retirement (Hugo, 2005; Skills Australia, 2010; Universities UK, 2007). Additionally, higher education budgets are constrained and have influenced the hiring of new staff members (Bexley, James & Arkoudis, 2011; Browne, 2010). As a consequence, casualisation of staff has become more prominent (Bryson, 2004; Coates et. al., 2009). Debowski (2012) argues that new academics, especially those on short-term contracts, experience difficulty in receiving appropriate nurturing in today's competitive academic environment. In such circumstances, higher education institutions have established some form of early career researcher professional development program. Such programs typically involve group workshops and online delivery and emphasise "transmitting knowledge about how to do research, rather than actually doing research itself" (Rees, Baron, Boyask & Taylor, 2007, p. 765).

There is also evidence that situated learning within a community of practice may enhance self-confidence and reinforce professional identities of those working in the higher education sector (Griffiths, Thompson & Hryniewicz, 2010; Major & Dolly, 2003). However, both Murray and Male (2005) and Boyd and Harris (2010) point out that such immersion can also be counterproductive by maintaining cultures that are not especially conducive to research. In emerging research institutions, it can be, for example, difficult to develop a research culture without a critical mass of experienced researchers. The experiences of early career researchers in these institutions may be curtailed in terms of choices and opportunities. However, particular ways to address these issues have been identified (see, e.g., Åkerlind, 2011).

In the current milieu, individual academics are faced with many choices, challenges and opportunities. This is particularly so for those relatively new to a developing academy (see,

e.g., Petersen (2011) and Hemmings (2012). It is thus timely then to build and advance knowledge for these academics, and their potential supervisors and managers, by accruing evidence about how the research career decisions of early career academics in this context are made, what factors influence those decisions, and how current initiatives promote researcher development and increases in research output. Accordingly, our study aimed to identify the critical interactions within higher education environments that change and support the research career trajectories of early career academics working in institutions with lower research profiles and a predominantly teaching-led culture. Given that current higher education policy in both Australia and the UK is designed to increase research and development activity, and that pressures to achieve excellence with limited resources are similar, it was convenient and appropriate to conduct a joint study.

The study reported here documents the forces that shape the development of early career research capacity in two institutions at the lower end of research performance (Australian Government, 2012; Higher Education Funding Council for England, 2011). Both institutions have a teaching-led tradition and are in the process of strengthening the nexus between teaching and research and consequently increasing research output and publications. As such, this study addresses a gap in the extant literature.

## Method

The terms 'early career academic' and 'early career researcher' are variously defined and used (Bazeley, 2003). A widely-accepted definition has been advanced by Garbett and Tynan (2010). They stated: "early career is often defined as the first five years after completing your PhD" (p. 175). In this study, this definition was expanded to include those staff members who were new to academic roles and those who were undertaking a doctorate. This broader definition is supported by Mann, Moyle, Reupert, Wilkinson and Woolley (2007), researchers from two newer Australian universities that were created from higher education institutions.

The sample of early career academics used in this study consisted of ten academics, five from Australia and five from the UK. The five Australians came from a regional university created from a former teaching-led College of Advanced Education and the other five participants were based in a UK institution currently seeking university status. The sample size was judged to be sufficient for the purpose of the study based on the guidelines provided by Crouch and McKenzie (2006) and consistent with an approach adopted by O'Byrne (2011) who investigated the development of researcher identity in Irish Institutes of Technology. She gathered data from 10 academics.

Academics in the current study were broadly representative of the diversity of early career academics in both institutions. The participants held lecturing positions across a range of disciplines, including Arts, Education, and Science. Even though most of the participants occupied junior ranks, several were performing other roles. The gender breakdown of the participants (six female, four male) was consistent with the overall staffing profile of each institution. According to the European Commission's (2011) Framework for Research

Careers, all participants could be included either as a 'First Stage Researcher (R1)' or becoming a 'Recognised Researcher (R2)'.

It needs to be noted that the participants in the study have been involved in a series of studies marking the progress of the two institutions towards a greater focus on research. These studies have monitored progress through the use of interviews and follow-up correspondence, document review, publication output records, and field observations (see, e.g., Hemmings, Kay, Sharp, & Taylor, 2012; Sharp, Hemmings, Kay, & Callinan, 2012). Data obtained from these various sources and about this cohort were used in a collective case study. Stake (2005) claimed that this form of case study is appropriate for examining "a phenomenon, population, or general condition" (p. 445) and has been widely adopted in higher education contexts (see, e.g., Lim & Barnes 2005). The present study employed a person-environment interaction framework (Sekiguti, 2004). Such a framework guides an exploration of the ongoing interactions by which individuals fit with and adjust to their changing work environment. It is appropriate when considering the opportunities, constraints, and individual traits that work together in decision making and identifying the critical interactions that shape these decisions.

The data set for the collective case study was derived from two main ways of eliciting participants' research career decisions and the outcomes of those decisions. The first technique involved semi-structured interviews and these averaged approximately 45 minutes. Typical questions were:

- Is there an activity or experience in which you need to build your confidence in terms of research?
- Are there particular research activities in which you are very confident in performing?
- Have you been, or are you, in a mentoring relationship? If yes, could you describe the relationship?

The interview transcripts were analysed and the individual case stories produced reflected the key features of each participant's research journey. Summaries based on these case studies were fed back to participants for their information and as a reminder prior to further investigation using a second technique akin to that described by Dart and Davies (2003). They asked individuals to reflect on their experience in a program and to tell their stories of 'significant change' that resulted from their participation in order to capture events, essential truths, and provide explanations. These most significant change (MSC) stories are then used in a systematic way for purposes of monitoring and evaluation. In our study, participants were asked to describe the most significant event, person, or circumstance that has influenced their development as a researcher. This question was followed by the further question: Are there any other such events, persons, or circumstances which also contributed to your development as a researcher? This form of questioning requires participants to identify significant changes that were explicitly valued by them, and the sources of those changes in terms of research capacity and confidence. In contrast to the first technique, where the interviewer structured the conversation, this second more open-ended technique invited the participants to tell their own story.

The case stories derived from the interview data were combined with the MSC data to arrive at an understanding of the factors that influenced the research career decisions of sampled early career academics. The combined data set was analysed within an essentialist framework to identify the key factors, and this analysis was conducted in accord with an approach advocated by Braun and Clarke (2006). The results of this thematic analysis are presented below.

## Results

The themes were developed around the journeys of the participants. It was found that the journey to become a researcher is a very personal one in which individual attributes interact with specific events and circumstances. These events and circumstances seem to play a significant role in decisions that influence the perceived capacity to research, the direction that research takes, and the motivation to pursue this research. For most of the participants, research self-confidence was central and involved a positive belief about being able to successfully carry out various research activities, and that such success leads to worthwhile and satisfying outcomes. The five interrelated themes outlined below identify common features in the research journeys of the ten early career academics:

1. An *institutional environment* that included access to support for professional development opportunities together with an organisational culture and groups that value and engage in research.
2. *Individual attributes* that included an ability to set priorities, have a clear research orientation, exhibit drive and an ability to respond to feedback and thus creating and exploiting research opportunities.
3. *Postgraduate and other research training* that opened up new perspectives, presented opportunities for research, and scaffolded future research that was congruent with personal goals.
4. *Supportive interactions with others* that included networks, ongoing relationships with supervisors, researchers who act as models in the workplace, research colloquia, team membership, communities of practice, and working with mentors and coaches.
5. *Outcomes from the research process* that conferred status, recognised achievement, provided satisfaction, empowered the researcher, and resulted in grants and publications.

These themes will now be explicated by drawing on highlights from the data set. The participants are numbered 1 to 10, with the first five being from Australia and the second five from the UK.

### Institutional environment

The institutional environment creates the context in which the participants make decisions about how, when, and with whom they engage in research. Participant #1 contrasted his current support for research with that given in his previous institution as follows: "I am [now] being given all the encouragement I need to do research…to have this and that… to spend 20% of my time on research… how good is that?" Participant #2 highlighted several opportunities to develop her research capacity, including a writing retreat and

funding towards attendance at the Summer Institute of Qualitative Research in the UK. She noted how "this week long research symposium provided access to key thinkers/researchers and was an invaluable opportunity for framing the thinking informing my [PhD] study. I really felt valued by the University". Another Australian participant (#3) described how gaining a Faculty-based seed grant affected her in a positive way. She drew on the following words: "… it gave me a lot of confidence... confirmed that my work was really worthwhile".

The UK institution provided a range of professional development opportunities for staff members. Participant #10 claimed that she had taken full advantage of the opportunities available to enhance her research skills and confidence. This included opportunities to meet with other doctoral students in the institution and to gain funding to attend relevant conferences. Other colleagues also made good use of the available institutional support. For example, Participant #8 was supported by her line manager through a time allowance for study and Participant #6 had some of his travel costs covered to meet with his doctoral supervisor.

**Individual attributes**

The individual attributes of the participants influenced the way they approached their research and responded to challenges and opportunities, and how they were able to garner support and resources. Participant #4 responded to the challenge of tailoring his research to his teaching responsibilities and field of interest. Since taking up his appointment as a lecturer he has tried to redefine his research interests. He acknowledged the need to set priorities when he said, "[I] am battling with narrowing my focus and learning to say no to students and potential projects if they don't directly relate to my own goals".

Participant #2 recognised that the complex interplay of balancing full-time teaching and research activities requires considerable planning in order that "interruptions to opportunities for deep reflection and immersion in research..." are available. She went on to say: "It takes time for me to move into a headspace that produced high quality research and this can be impeded by a patchwork approach to teaching and administrative tasks across any given week".

**Postgraduate and other research training**

The nature and quality of such training appears to have had a significant impact on the participants in terms of expanding their research horizons and providing the necessary skills and tools. Participant #1 emphasised the importance of good postgraduate supervision in the following statement: "My doctoral supervisor has had a significant impact and taken me away from a fairly linear idea of research by introducing me to questions of epistemology and ontology". Participant #4 related that research training takes place over time, and, in his case, it was spread across a decade beginning with his PhD candidature "seven years of research training [in USA followed by] … three years of post doctoral training elsewhere".

Participant #6 chose a professional doctorate with a structure that had a synergy with his preference for being taught how to go about the research process and then how to apply these skills and insights in research that has direct relevance for him and his institution. He stressed how his doctorate "has given [him] the competence and confidence to set out independently as a researcher". Participant #9 had only completed the first year of enrolment in a PhD at the time he was first interviewed and was finding doctoral study very challenging. Later he reported, "I am beginning to feel as though it's easier to navigate. I've now got a clearer understanding of the theoretical landscape and this has made the process a lot less threatening...I am now beginning to develop a theoretical position of my own, by identifying where my research sits within the wider discourse".

## Supportive interactions with others

Academics beginning to undertake independent research rely on the support of others to act as sounding boards, provide affirmation, and model, guide, and mentor. Participant #1 commented on the help he received from members of a writing group. Leaders of this particular group offered him assistance and to others with less experience. He noted how the leaders "supported us to increase the output of publications". Participant #2 was invited to join a national and externally-funded research group. For this participant, the group "provided access to a wider group of experienced researchers from two other leading Australian universities. [She] gained a great deal of confidence by networking with other early career academics and learning from experienced researchers… developed skills, networks, and knowledge about how to further develop [her] research capacity and contribute to the research capacity of the group".

Participant #3 explained the importance of receiving help when she first joined the academy as follows: "… there was a time in the first couple of years when I felt like a duck out of water. I was so green that when I started submitting papers and the first one came back accepted, but needing some revisions, I was so ashamed. I thought I had failed. I didn't know that this was to be expected. I also didn't realise that at that time the journal I had submitted to was classified as A*, one of the best in the field. Fortunately some senior colleagues pointed me in the right direction". Following these early days, she joined a research team comprising experienced researchers who acted as both models and guides. To exemplify, she stated that "researching as an individual is very lonely work ... I need to feel supported ... to be able to bounce ideas off others. I am learning heaps from the team - the team is great". Team participation has extended her external network as she indicates: "I now know people who in the past were just authors – and they are so real and generous with their time and expertise". Teamwork was also important for another participant who recognised that whilst the nexus between teaching and research was pivotal when working in teams, "having a focus on research that extends beyond the prevailing 'relevance to teaching' perspective and setting appropriate research targets [was also necessary]" (participant #7).

Participant #8 valued the support of her doctoral supervisor, line manager "and a senior colleague who provided guidance and mentoring". Participant #10 mentioned mentoring as well as enjoying the support of other students. This was evident in her statement:

"there's a sort of informal group that gets together…who are involved in doctoral study. We meet with somebody who sort of chairs it and organises it and I suppose is our mentor for the group".

**Outcomes from the research process**

The outcomes of research can engender personal satisfaction, confirm one's identity as a researcher, and create opportunities. Participant #5 received a competitive grant following the completion of her doctoral study and this grant allowed for an extension of that research. Participant #3 reported a somewhat similar experience and said that she "was greatly encouraged when asked by a senior colleague to extend a research project from the previous year". Participant #8 discussed how she was empowered by her research to move on to a position with greater opportunity for research and remarked "my doctorate has certainly contributed to my professional development and widened my horizons. [It] has given me the confidence to pursue my career and is a sign to others that I am capable of research".

Research by others can also have a profound effect on those very new to research. For example, participant #5 described how each member of her lab "took it in turns to select an exciting or recent scientific publication [for members to comment on] the strengths and weaknesses of the study". Participant #10 decided she "wanted to be a researcher after attending a conference…and heard Mary Jane Drummond from the University of Cambridge speak about her work with teachers and pupils on 'learning without limits'". This conference presentation "ignited a spark" that generated a range of research ideas and potential projects.

# Discussion

This section begins with a general discussion of the study, including our adopted framework, methods, and findings. This is followed by a consideration of the specific implications for each of the themes for those wishing to shape the research trajectories of academics early in their careers. It concludes with approaches that could be used in further investigations in this promising area of research.

The experiences of ten early career academics, five from Australia and five from the UK, were considered to identify the choices, challenges, and opportunities presented to them as they developed as researchers. This consideration involved an analysis of the influences affecting research career decisions leading to the identification of five emergent themes. The themes identified fit within a dynamic person-environment interaction framework as envisaged by writers such as Sekiguti (2004) and Neufield, Rasmussen, Lopez, Ryder, Magyar-Moe, Ford, Edwards and Bouwkamp (2006).

When considering the five themes identified here it is important to keep in mind that some of the participants in our study entered academic life straight from graduation whereas others entered after working as professionals in other places. These themes also outline the various avenues in which early academics can be influenced. To be more

effective in assisting early career academics to become researchers can require close monitoring of the journey of individuals, including the discernment of their needs. This critical role can be performed by mentors and/or other colleagues. While it is tempting to suggest general needs that correspond to particular developmental stages, the findings of our study indicate that the need for redirection, support, challenges, inspiration, and collaboration may be important at any time and especially at turning points in an individual's academic career. The empirical evidence, as related by participants, thus poses challenges for those leaders and managers who seek to shape both the identities as researchers and long term career trajectories of early career academics with a primary aim of increasing the research output of their units/institutions. The evidence available suggests that shaping the career trajectory of such individuals is a complex task. Some things may be easily changed, some may require additional resources, and some may take considerable time. Individual attributes present a particular challenge and probably can only be fully addressed through a recruitment process that takes into account the attributes required in particular situations, such as engaging a person to join a long-standing team. However, leaders and managers can adjust the institutional environment to better support research and researchers, ensure quality research training, help to establish, support, and extend opportunities for collaboration and networking, and recognise and celebrate the outcomes of research activities.

The findings of our study imply that those responsible for implementing plans and programs in professional learning and development for early career academics should consider the inclusion of activities designed to:

* build confidence in a range of key research tasks;
* create challenges that result in deeper thinking;
* foster the development of teams and networking;
* encourage self-regulation and movement from dependence to independence as a researcher;
* help manage the tensions inherent in the time devoted to teaching and research;
* stress the positive nexus between teaching and research; and,
* provide a safe and supportive environment in which individuals have the opportunity to speak confidently and positively about their own research.

The outcomes of our study support the model conceived by Evans (2011) in which she conceptualised researcher development as a field of study and drew attention to the role of professional and personal growth. Moreover, the importance of affective issues in decisions relating to an individual's development as a researcher is also consistent with her model. The findings also complement and extend other literature in this field. For example, our study points to the role of teams, networks, and communities in providing nurture, support, and direction for neophyte researchers (see, e.g., Debowski, 2006; Hemmings, 2012), and the way in which doctoral programs with good supervision can provide the insights, tools, and confidence to engage in and scaffold independent research (see, e.g., Dever, Laffan, Boreham, Behrens Haynes, & Western, Kubler, 2008; Laudel & Gläser, 2008).

It is worth noting that the design of this study included the use of multiple sources of data gathered overtime. The data gathering process included an interview phase followed by feedback and further communication with participants. As a consequence, this permitted reflection over time and the opportunity to place people, incidents, events and circumstances in a longer term and broader perspective. Participants included statements such as "this was pivotal in my development" and "as a result I decided to" as they became correspondents describing their journeys as researchers. Particular instances of praise, recognition, and reassurance were seen as turning points. During the study, we analysed the data and came to know the participants, thus making it possible to ask further questions based on knowledge of the participants, making for richer, more reliable, and discerning accounts.

In our study it was essential to listen and observe carefully in order to gain insights to shape subsequent questions to probe understanding, motivation, and goals, rather than strictly follow a set of pre-determined questions. In this way, an interviewer can engage the participant, make tacit knowledge explicit, understand complex matters from an individual's view and explore unexpected aspects. During the interviews participants were encouraged to expand on their initial thoughts. This permitted 'observations' about what was not said, which can often be significant (Poland & Pederson, 1998), and to follow up as appropriate to give voice to the concerns and successes of participants.

Even though the quotations used to support the themes are generally positive in tone, there were also a few examples of negative statements that underscored the importance of a particular context or situation in shaping the way in which research flourished within and between the various stages of the development of early career academics. For example, the absence of encouragement and lack of mentoring highlighted the importance of supportive interactions with others. As well, a lack of suitable laboratory space and equipment was identified as an environmental constraint of one of the institutions. Participant #7 made an observation that was shared by several others concerning the need for staffing arrangements to reflect the time required to do research "… it is not easy [to devote time to research], because I routinely work 11 hours a day". The issue of balancing full-time university teaching with research and shifting between these activities was described as difficult. This difficulty was not solely a consequence of the lack time available but also the availability for periods of sustained reflection, reading, writing, and immersion in research. These examples are reminders that the journeys of individuals were seldom 'plain sailing' in these two institutions with lower-order research profiles and limited resources.

The institutional environment provides the broad context that shapes the direction and creates opportunities for development of early academics and their careers as researchers in institutions with an emerging research profile. This means that institutions that wish to increase the output and quality of research would be well served by benchmarking the steps taken to provide an optimal environment against comparable institutions, with an excellent record in this endeavour, to identify further initiatives. One way for this to happen is by making available induction programs in both face-to-face and online forms that highlight ways in which new academics can meet and network with their peers, share

ideas about practice, and identify sources of support. Of course, such programs need to take into account the different backgrounds of early academics. That is, those with little or no teaching experience require different support from those entering from a profession relevant to their new position. Simply providing general training in tertiary teaching, and associated assessment and administration, may fail to meet the diverse learning needs of those new to academe. The learning needs of neophyte academics increase significantly when the development of research capacity is also considered. For example, those individuals entering academic life after post-doctoral experience in a research setting may only need help from a mentor to find their feet, while those coming from the professions often need to be helped to understand the nexus between the content they will teach and the research they could undertake into the practice of professionals in this field. The latter group may require ongoing access to a suite of programs to develop relevant research techniques. As suggested by Archer (2008), the above differences need to be reflected in the institution's approach to performance management. She underscored the need to consider the developmental needs of young academics and recognise the way in which performance management can shape their perspective on university life through the pressures for performance and production and thus influence the career trajectory taken. While the developmental needs of neophyte academics may be similar in institutions that are both emerging and research-intensive, the way these needs are addressed may differ considerably as suggested earlier in terms of mentoring.

The individual attributes of early career academics influence not only their research interests but also the way they approach research, preferred methods, and the extent to which they are willing to collaborate with others in their department. This implies that those concerned with selecting new academic staff need to consider not only the experience and skills the person brings to the position but also the context in which the person will work and the likelihood of fitting into this context. This is one of the reasons that many institutions have broadened the selection process to include exposure to a wider audience.

The nature and quality of postgraduate and other research training of early career academics influences both their inclination and capacity to engage in research. For example, those who have been members of a research team prior to becoming an academic tend to expect to be able to continue as researchers. This can be a source of frustration in institutions where this possibility may not exist. However, those who have been recruited for their experience in a profession are more likely to see their roles as, and gain satisfaction from, preparing students for entry into that profession and may need particular support and encouragement before they are confident in embarking on a career that includes research. Their journey to become a confident and productive researcher may require the completion of a doctoral qualification. Those who enter academic life directly after completing a doctorate, and without teaching experience, are initially preoccupied with becoming competent teachers and may not actively engage in research for some time. The staff induction and subsequent professional development programs of both institutions emphasise teaching, learning, and assessment and arrangements for mentoring as a matter of priority in this settling-in period.

Some participants in our study found that maintaining an ongoing relationship with their supervisors helped them through this period. This finding resonates with the work of Dever *et al.* (2008) based on Australian doctoral graduates as well as a recently introduced Researcher Development Framework by Vitae. Vitae is the UK organisation promoting the personal, professional, and career development of researchers and postgraduate students at all levels. This framework can be used as a self-assessment tool and guide for mentors providing some standardisation between institutions (Vitae, 2012).

Notwithstanding the above, there are many challenges and barriers to the development of an academic career (see, e.g., Coates & Goedegebuure, 2012; Debowski, 2006, 2012). The difficulties outlined earlier were found to be significant for the participants in the two institutions studied. Thus, it is less likely for academics in similar institutions, with lower research profiles, to engage in higher degree by research and other research training or take full advantage of such opportunities unless steps are taken to help remove these barriers.

Academics early in their careers rely on the support of others to find their feet and begin to undertake independent research. It was evident from conversations with the participants in our study that confidence was a necessary prerequisite for making a decision to invest time and energy in pursuing a career in which research had a significant place. Being aware of the imperative for increased institutional research output did not appear to be sufficient driver in itself to make such a decision for those who had not previously conducted rigorous research; the support, collaboration, and encouragement of others was needed. The decision seems to require that those who work with and supervise early career academics are trained to identify and respond to the need for such confidence building and to help create an appropriate environment by such means as including early career colleagues in a project team or inviting them to co-author a paper. Mentors are in a position to emphasise the importance of networking and research collaboration as a means of gaining new skills, insights, and perspectives that would take many years to develop if working alone, a point emphasised by Johnson (2011). Such mentoring is often part of a university's early career program that includes an early career researchers' group designed to provide a forum for sharing experiences, ideas, and aspirations. This study highlights the importance of these avenues for support in institutions developing a research profile.

Once an early career academic has begun to produce research outcomes, this work can engender personal satisfaction, confirm one's identity as a researcher, and create further research and career opportunities. This was very evident in the experience of those participating in our study, especially for the women interviewed. The first success, whether it was the presentation of a paper at a research conference, obtaining a small grant for research, or being invited to join a successful research team, often became a turning point in a participant's career and changed their career goals. The role of both formal and informal mentors in exploring avenues for success and helping interpret and celebrate small achievements is important in enhancing the research self-efficacy of neophyte researchers.

This research study has opened up promising avenues for future investigations. It would be worthwhile to extend our study by undertaking a larger, longitudinal investigation of the journeys of early career academics as they negotiate a balance between teaching and research in a wider range of settings, including institutions that are more advanced than the two in this study in becoming more research productive. Our study was confined to two institutions with less developed research cultures and relatively low research outputs compared to research-intensive institutions, restricted to ten participants, and with limited opportunities for feedback and long-term follow-up. Such limitations should be addressed in any future investigation. The value of investigators establishing ongoing conversations with individual neophyte researchers and having them tell their stories would appear to be fruitful, particularly in relation to turning points in their careers. Such further research studies could help those charged with the responsibility for increasing both the output and quality of research.

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