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Mentoring the next researcher generation: reflections on three years of building VET research capacity and infrastructure.

Abstract

During 2008-2011 the National Centre for Vocational Education Research (NCVER) funded a programme to build Australian VET research capacity and rejuvenate the existing 'greying' researcher pool. This paper is a reflective narrative about experiences of constructing the programme with a specific focus on the mentoring activity. It is about *researching* how we develop VET *researchers*, and specifically the role that experienced researchers can play. During those first three years more than 40 experienced VET researchers have been associated with the programme, mainly as mentors and facilitators. These mentors have supported thirty new VET researchers undertaking an initial local VET research project and supervising them through to their subsequent publication with NCVER. This paper focuses on the mentoring that took place and what researchers and research managers can learn from those experiences in terms of building research capacity.

This paper reviews the first stages of what has been a participatory action research project for those associated with the programme as the national research infrastructure for new VET researchers was constructed. It evaluates what actions have had the greatest impact and what we can learn from the initiative. It traces the project development from the initial project dilemmas through to the completion and publication of papers. This paper provides a narrative of the relationships that built the programme, focusing upon the mentoring relations striving to bridge both cognitive and geographical divides.

The findings indicate that mentoring has played a critical role, and has been established as an essential role in this new VET researcher development pathway. The paper concludes by comparing the components of the Australian programme to a theoretical model and producing guidelines for research mentoring practice that have applicability to related research fields.

Key Words; Mentoring, Research capacity, VET research, new researchers, research infrastructure, research community.

Introduction – exploring the unknown

The aim of this paper is to review the national mentoring programme to find out what actions supported new researcher development, what was their impact, and what we can learn

from the activity. However, I would like to begin by reflecting upon how we have grown as researchers. After a period of initial exploration as researchers, we begin to settle down into our research community, and put together our own personal map of conferences, journals and research colleagues, that expands and changes over the years. We use what we already know to make sense of the next venture, just as we use what we know about researching to shape our next research project. However, sometimes an opportunity presents itself that jolts us into new and uncharted territory, and where the markers of the past seem to have no relation to the landscape before us. This has been the experience of initiating a national mentoring network for new VET researchers. It has been a deeply challenging learning experience and mirrors a similar physical challenge I undertook before my move to Australia.

Some years ago I had an idea. What would it be like to experience climbing at altitude? In a few months I was travelling to Mont Blanc. Preparations for the assault were made and a local team assembled. The first day was hour after hour of a long vertical climb up giant boulders, scattered with occasional crosses. In the late evening we made the mountain hut on the snow line, slept for a few hours, and at 2am set off into the darkness towards an invisible summit. I suddenly found myself somewhere I had never been before. It was minus eighteen degrees Celsius and I moved for the first time in crampons on snow and now at altitude, fighting for breath every three metres. My head torch lit the trail, but I had no idea where or how far the summit was. I was filled with fears that I could not and perhaps should not continue to the top. We passed crevasses as deep as cathedrals, clinging to our snow bridge paths. What had yesterday been arduous, was now frightening. I was out of my depth. I was unskilled for this venture. It appeared that nothing I knew equipped me for the struggle that lay ahead as the night turned into a fight for survival. Altitude pressure added to the cognitive confusion. Stopping in the moonlight I took off my outer gloves and tucked them under my arm while I ate a snack. I relaxed my grip, and saw the gloves skim down the ice shelf for two thousand meters. I was gloveless in freezing temperatures. Fortunately we carried spares. We moved ever upwards, joined by our rope and relying on ice axes. I had never done this before, been this high, or experienced these conditions. I tried to remember what I had read and stored away as thinking sequences, and apply them to the options placed in front of me. It was a perilous journey. The wrong decision would result in an addition to the thirty climbers killed on this mountain each year. I applied everything I knew to the new situation. As the dawn broke, at last we saw our goal and after some exhausting hours found ourselves at the top, feeling elated, and far more knowledgeable than the night before. The fears of the night flew off our shoulders and down the ice flows to the green valleys so far below. The task had been mastered.

Learning through experiencing

Placing yourself into an unknown physical situation is a very visible challenge. When we do the same thing cognitively, as in the development of national mentoring network, the challenge is far less visible, and the apprehension is often well hidden. The elation of gaining a research grant is quickly followed by the fear of how the promises made will be met. The excitement of the new territory opening up ahead is matched by fears of the unknown and fears of failure. Piloting a programme to mentor new researchers in VET has had the same challenges of a climb on ice at altitude, with few markers in unfamiliar and unfamiliar territory. It was about doing something that has never been done before, and perhaps more frighteningly, taking novice researchers with us. The difficulties of being a new researcher are already well documented (Holden and Smith, 2009). This paper is about managing these experiences and about the knowledge that has been gained through those experiences. It is about *researching* how we develop VET *researchers*, and specifically the role that experienced researchers can play. It seemed in the midst of the activity that Einstein's quote had never been more apt, 'If we knew what it was we were doing, it would not be called research, would it'? Many research studies trawl retrospectively the experiences of others and then conceptualise the relations of that practice. In this case the proposal, action and reflection have formed a continuous cycle, with participant and researcher roles fluidly interchanging. Indeed, this paper is itself yet another part of that reflection cycle looking back on an as yet incomplete 'action in practice' project that is still swelling the ranks of VET researchers and preparing the next generation.

The greying population problem

Building research capacity requires sustained long-term investment. The Australian VET landscape has been subject to revolutionary change over the past two decades as discourses of uniformity, industry competency, workplace learning and market competition swept through the system. The establishment of the National Centre for Vocational Education Research (NCVER) positioned research at the heart of those changes. So when NCVER began the construction of yet another triennial strategic plan for VET research in 2007, they were doing so from a relatively solid platform.

The national centre was building on a succession of strategic plans stretching back more than fifteen years, during which time a massive statistical base and an comprehensive library of evidenced-based VET research reports had been accumulated. Nearly two decades of funding relationships had established VET research centres, associations and conferences nationwide. However, it was evident to NCVER that the infrastructure and the body of research that had been established was increasingly dependent upon a group of experienced VET researchers who had grown with these venture, prospering as government funded the changes to a

nationwide competence platform for VET. This was now a greying and diminishing body - a body slipping into retirement, and towards less onerous pursuits. Indeed, NCVET showed perception in recognising their own 'skills crisis' of mature expertise in research, one they shared with many professions (APSC 2006: Dychtwald et al 2006).

Without skilled researchers there is no continuity of the quality evidence-base upon which to build VET development. In 2007 national discourses were beginning to resonate with voices indicating a looming skills crisis (Financial Review 2007), and these voices have continued to grow more vocal over the past three years. There was, and is, little doubt that VET expansion and quality are increasingly visible issues, and strongly linked to national and social productivity and prosperity as recent reports by the Productivity Commission (2011) and Skills Australia demonstrate (2011). There was, and is, therefore a need to ensure that such development would be based on continued quality VET research, research that would need quality researchers. The problem was that VET researcher development was at this stage a rather random production line. A Higher degree student *might* choose a VET topic, a VET practitioner *might* instigate a local research into a burning issue and both groups *might* find themselves later on presenting their findings at a national conference. Standing on the periphery of the conference and of the research community, their subsequent integration was dependent upon chance interactions. What were needed were pathways to attract and develop new VET researchers that integrated them with the community and encouraged the 'legitimate peripheral participation' described by Lave & Wenger (1991) that is so instrumental in 'learning'.

NCVER called for expressions of interest in a 'Building Research Capability' programme (BRC) in 2007, and received more than 30 consortia responses. From this response a three-pronged initiative was fashioned. The University of South Australia would provide support to higher degree students who had selected VET research topics. Then Victoria University (VU) and Australian Vocational Education and Training Research Association (AVETRA) would respectively provide community of practice (CoP) workshops (Lave & Wenger 1991) and mentoring for a group of reflective VET practitioners who would carry out a modest, locally based, organisationally supported research project, drafting a final 20-page report for NCVET, that they would present at a VET research conference.

Building VET research capacity

The BRC initiative therefore focused on two distinct groups, higher degree research students and reflective VET practitioners. This paper focuses on the second group, and specifically on the mentoring activity, although within the development of this programme and the associated reflective practitioners it is impossible to segregate the contribution of the

mentoring activity from that of the community of practice workshops. They have formed an integrated approach.

What follows in this paper is a reflective narrative telling the three-year story of how this new VET researcher program was devised and developed, using the voices of the participants and the orchestrators. Naturally it is still an incomplete and limited narrative as the programme and participants continually learn and adapt processes from every interaction. Much of the learning during the programme has been gained through one to one interactions between mentors and new researchers. This paper is an opportunity to accumulate and distribute this learning further within the VET research community. It is a time to stand back at the close of the first three-year cycle of the programme and assess what we have learned about building such research development infrastructure. However, it is written in the knowledge that as an interim statement of the story so far, the gap between the writing and subsequent publication will condemn it to be yet a statement of the past, as the text remains static on the page, while the mentoring activity it comments on is continuing. Our research papers are always statements about the past, but in this case of an action research project, it can simultaneously be a tool to generate further reflection, feedback and action within the VET research community, and promote future development.

Review of related literature – learning to research

Mentoring has long and diverse history. Mentor was the trusted friend of Odysseus who helped by advising his son, Telemachus (Homer, 2010). Mentoring, often employed unconsciously as a learning technique in all forms of personal development, has recently enjoyed a more formal status in the workplace as the importance of social aspect of learning has been increasingly recognised (Lave & Wenger (1991). Mentoring has long an illustrious history of preparing individuals for future challenges by guiding their development activity, responding to questions and introducing them to network resources and opportunities (Johnson 2008). In relation to this specific VET research context, mentoring offers several advantages as a social learning strategy (Bandura 1977; Garrick 1998). It is individual focused, meeting the need of unique individuals and their contexts to form new identity (Du Gay 1996). It enables broad and diverse resources to be matched to specific individual needs. It enables a broad pool of mentors stretching across the continent to be available in different localities. The new researchers benefit from a dual learning system, with mentoring providing the individual focus while the community of practice provides a collaborative and shared learning experience (Easterby Smith 2000).

Mentoring researchers

Mentoring has a growing reputation as an essential component of all VET staff development programmes (Clayton, 2010; Wheelahan and Moodie, 2010; Figgis, 2009). Mentoring relations within the research field research are based upon the long traditions of thesis supervision and are usually defined by the specification of the final contribution to the stock of knowledge, and through gaining the acclaim of esteemed peers within the field. In a study involving elite researchers (Zuckerman 1977, p 2) found that the principal benefit of their mentoring influence:

‘...was a wider orientation that included standards of work and modes of thought.... a time of what social scientists call socialization. Socialization includes more than is ordinarily understood by education or by training: it involves acquiring the norms and standards, the values and attitudes, as well as the knowledge, skills, and behaviour patterns associated with particular statuses and roles. It is, in short, the process through which people are inducted into a culture or subculture.’

This focus on socialisation is echoed by Kalichman (2001, p 873) who highlights the role of nurturing cultural values of the research profession - ‘research mentors ... are responsible for defining, explaining, exemplifying, and requiring adherence to the value systems of their institutions’. He continues to describe the multiple objectives of the research mentor. First is the development of *capability* with knowledge of methods, planning, creative thinking, completing to academic or professional requirements, and maintaining standards of conduct. Then comes *career preparation* with knowledge of grant application options and budget management. Finally there is *socialisation* into the network of researchers, ‘interacting with others’, where the mentor will often be a protector and advocate. Silen (1998, p 3) describes a complete research mentor as;

‘a single individual who is able to serve as an advisor/guide, developer of talent/coach, opener of doors/advocate, role model, interpreter of organizational or professional rules, protector, rule setter/boss - and carries on all of these functions on a long term basis’

Kalichman (2001) cautions mentors to be aware of, and to use ethically, the power that they acquire from such relationships as mentors are ‘in a position of authority over the trainee. Even a mentor who is not very senior has a great deal of power relative to a trainee’. Healy and Welchert (1990) indicate that the diverse ways that mentoring is defined underlies the confusion about outcomes from the interaction. Roles. Zuckerman et al (1991, p 2) makes a clear distinction between the role of supervisor and mentor. A supervisor’s responsibility is primarily about getting the work done and passed, but the role of mentor is wider and deeper.

‘Not everyone embodies the characteristics needed in a good mentor. While the terms "mentor," "thesis adviser," and "research supervisor" are frequently used interchangeably, it is important to note that thesis advisers and research supervisors are not necessarily mentors.... thesis advisers are responsible for insuring that students fulfil departmental and institutional requirements....mentors provide information that is essential for professional success....a mentoring relationship should not be a passive one ...it is necessary to take an active role in identifying and communicating his or her needs and expectations in the mentoring relationship....the trainee has the responsibility to evaluate the mentor's advice in light of his or her own values, goals, and experience’. Zuckerman et al (1991, p 2)

Little (1990) emphasises the dual benefit of mentoring. While novices have much to learn from their mentors, the role encourages the mentors to reflect on their own discipline field and distil key learning issues, often reviewing what they experience daily through new eyes.

Mentoring in the VET researcher context

Mentoring in this specific case may be a role within the broad academic context, but it has to be tailored to the needs of novice reflective practitioners and the goals of NCVET who want each novice researcher to complete their project and produce a publication within one year. The mentoring role has therefore to be positioned as *one* of the components in the wider plan to build research capacity within VET. Building research capacity is both about individual learning and about constructing systems of learning within the VET community. Learning theory has a long and contested theoretical history that at one extreme encompasses simplistic knowledge transfer, and at the other constructivist approaches to learning or knowing (Boud 2005; Poell et al 2000). This specific case of building practitioners research capability is far more aligned with the latter end of the learning theory continuum for three reasons. First, it involves the development of higher order cognitive and attitudinal skills. Second, it builds on considerable and diverse practitioner knowledge bases. Third, the knowledge base is complex and contested, with no right-way, and considerable challenges in terms of selection and adaptation of methods for multiple and diverse contexts. In short, there is no agreed or simple body of knowledge to be assimilated and reproduced (Hager & Halliday 2009; Sanchez 1996).

Models of research development processes have been in existence for a considerable period of time as they have long formed a core process in universities. The focus has generally been on diverse forms of cognitive apprenticeship (Berryman 1993) that position the learner as selector of the learning direction and are based upon engagement with a real project and where senior academics act in a mentoring role as process protectors, network gatekeepers

and motivators. The power relationship changes and reverses as the project progresses. This academic model all too often fragments into a series of individual relationships, continually tracing the same development phases, yet remaining insular and disconnected as a developmental community. The focus remains on the individual and their specific projects. The goals of nationwide research training are achieved through individual completion rather than collaborative development, and are locally situated.

This form of supervisory/mentoring model is inappropriate for the new VET practitioner-researchers, as they are building from a practitioner's knowledge base, not an academic knowledge base. In addition, they are producing projects for a VET practitioner audience, and not for academic examination. These learners have three specific needs. First, they need access to research knowledge and practices. Second, they require critical support and review to focus their modest locally based research proposals. Third, they need to be supported and encouraged in their year-long action learning activity. NCVET proposed that these needs could be met through enrolment in a community of practice to workshop their projects, and through supporting each participant with a research mentor.

There is a little literature about constructing research capacity outside the specific goals of the university system. However Cooke (2005) provides a useful reflective model of research capacity building with practitioners in the UK care industry. This model has guided the development of the AVETRA mentoring programme. Cooke (2005) indicates that primarily learning is needed at each of three integrated levels; *individual*, *team* and *network* levels; and that *6 principles* will support such learning. Learning should be constructed to simultaneously:

- build skills and confidence;
- it should be close to the field of practice;
- it should be based on partnership;
- there should be continuity to the process;
- appropriate dissemination of findings;
- and the establishment of infrastructure.

Isolated individual mentoring on its own would fail to meet these basic components for a *system* to build research capacity. What was needed was a program that combined the benefits of a collaborative community of practice experience with the individual focus of mentoring relationships. In the early months of 2008, through discussions between NCVET, AVETRA and VU, such a program was devised.

Research method

Focusing the research

Traditionally research begins with incisive questions that explore an issue of practice. In contrast, action research begins with a specific 'action' to effect change within the field of practice. In this case the action was devised to build VET research capacity nationally. Instead of researching, reviewing and proposing options for building research capacity, NCVER took the initiative to fund activity to build research capacity. This study is based on the continual review of the mentoring component of the resulting programme designed to *effect change* by increasing VET researcher capacity. The aim of the AVETRA mentoring network was as follows.

'The aim of the VET mentoring program is to support the NCVER scholarship holders¹ develop, complete, and write up their VET research project'.

Evaluating how far this had been achieved became the key focus of this associated research focused upon three interlinked research questions:

RQ1 - What actions supported new researcher development?

RQ2 - What was their impact?

RQ3 - What can be learned from the activity?

The development of the mentoring network and the new researchers has been, and will continue to be, an action research project (Kemmis & McTaggart, 2000), with the emphasis on the *action and researcher development*. The design of the associated research has been iterative and the data collection ethnographic in nature. This paper is therefore based upon action research methodology. It was evident from the start that while the project was nominally about building researchers in uncharted territory, it was simultaneously also about researching how such a venture should be constructed.

The data collection process

The data has been gathered concurrently with the actions of building and fine-tuning the infrastructure and relationships of the programme. The data sources consist of scanning the written documentation for the scheme, observing the interactions of participants, and capturing the issues vocalised by the participants and mentors. Over three years there have been five workshops where participants have described their goals, their dilemmas and their successes. Similarly there have been nine mentor teleconferences where mentors have discussed their experiences, learning and needs. In addition, there have been more than 100 individual telephone calls with mentors and new researchers to monitor progress and respond

¹ The NCVER provided \$4k scholarships the chosen new researchers.

to specific issues. The researcher has been both a participant and a researcher through this period. The data collection processes were therefore ethnographic in nature consisting of planning for each interaction, and then taking notes during and after each interaction. During this period, the collection of research data was the secondary purpose of these interactions with personal development being privileged. However, fifteen telephone interviews were subsequently conducted specifically to collect research data, to probe issues emerging from the accumulated data, gain further reflections of participants and mentors, and to confirm the validity of emerging perceptions. The data collection and analysis for this study was conducted manually, with the content analysis focusing on conceptual analysis rather than relational analysis and driven by the research questions (Laurence & Margolis 2003). As in most action research studies, the principle limitation of the study was that the primary resource allocation favoured the participants and their developmental needs, with the collection of data being a secondary activity. In addition, as an action research study, it was often impossible to plan sequenced data collection as the 'action' was driven by the needs of the participants and was initially emergent rather than programmed. Ethical clearance for the programme was determined through initial project screen by the annual NCVET advisory group, with local institute clearance subsequently sought for each individual project.

Participatory Action Research

The action research approach at the heart of both this paper and the researcher development programme requires is an approach and a research method that requires further exploration. Action research combines the dual aims of both action in practice, and research (Kemmis & McTaggart, 2000; Zuber-Skerritt, 2009). That is, bringing about a change in a field of practice and increasing understanding and knowledge about this event simultaneously. Such dual aims are hardly ever in balance. Some projects are all about change, with the research being a fringe benefit, while in others the research is centre stage, and the action more of a by-product. These polarised approaches position researchers in very different roles. In the former approach, the researcher is an activist, taking an emic stance, involved in the twists and turns of the change process. In the latter approach the researcher is more detached, taking an etic stance, focused more on the process of research design and data collection, and less involved in the activity. Similarly the production of knowledge differs between these two approaches. In the former approach the development of knowledge is primarily through association, experience and is locally generated, while in the latter approach knowledge is more likely to be codified and distributed through publication. This is of course, as always, a false dichotomy, constructed to illustrate the difference between the approaches, as the reality is that all action research projects are positioned somewhere between these extremes. Therefore, the value of action research projects in terms of learning, lies somewhere between the immediate impact upon the participants and the subsequent impact of the project

conceptualisation, as it contributes to system development in different places and times. The developers and researchers need to strike a balance between these integrated and yet different goals – individual impact now or system development for the future.

This new researcher development program was based upon the former approach, participatory action research (PAR) (Reason & Bradbury, 2001), with the emphasis on the project activity and the research as a subsidiary component of the action, with the researcher as activist, directly involved in changing practice (Deetz et al 2000). This paper therefore both tracks the learning already achieved through the interactions of this project, and at the same time seeks to conceptualise those relations which have facilitated such learning with a specific focus upon mentoring. The rationale for choosing this approach, as with all research methods, lies within the subject and the context. This project sought to make a significant change for new researchers in the VET research community and to make a change in the pool of available VET research capacity. The emphasis was upon effecting change, with the research process primarily contributing to that purpose, and secondarily providing the opportunity to understand and conceptualise the process. There would be little benefit in standing to one side and evaluating a failing process. The intention was explicit and drove the project. The focus of energy was upon action and review. The cycles of action research were therefore not pre-planned and formulated to govern the subsequent activity, but were formed by the needs of the participants, as an evolving process and only visible as a pattern in retrospect. The benefits of this approach are threefold. First, the emphasis of the action was upon effecting change in a community and upon the participants as activists not interviewees. Second, in recognising and vocalising the inherently action research nature of the initiative all participants were provided with space and legitimacy to voice their own reflections on the process, thus providing a focus on reflection as an integral part of the initiative. Third, all participants were enrolled simultaneously as activists and reflectors. The distinction between researcher and action, researchers and actors, was often blurred. Coupled to these advantages come the associated problems of managing an action research project. It is far easier to be a voyeur in another community, than to take on responsibility for the action. It is also easier to plan a research action programme, rather than continually adapting your practice for each 'event' of an evolving and twisting programme led by participant needs.

Most approaches to research tend to polarise the fields of theory and research, segregating them, yet moving from other one to the, to ground, test or generate knowledge. Action research emphasises the dialectical relationship between action and theory as 'praxis' (Morgan 1980). That is, the focus is on the interrelated and interdependent relationship between action and conceptualisation, practice and theory. It could be argued that the direct and interlinked nature of praxis in action learning is well suited to our current world where

practice and relations are swiftly and continuously being reconfigured. Research and learning needs to be similarly aligned (Zuber-Skerritt 2009).

The primary characteristic of action research are cycles of action and subsequent reflection, where evaluation of the impact of the changed practices leads to re-planning, further action, and another subsequent action research cycle. Traditional models of action research often emphasise intention, action and review, however the popularisation of the experiential 'learning cycle' (Kolb 1988) emphasised a four stage conceptualisation of the change process where action (do) is followed by reflection (evaluation) and modified intentions (change) which are then implemented (plan) as illustrated in Figure 1.

Insert Figure 1 here.

Action learning and action research are similar in conceptualisation as they both incorporate action and learning, but differ in intention and outcomes. Action research can be defined as an approach to action and learning that is more intentionally systematic, enrolls multiple participants, and publicises outcomes (Dick 1999). In this action research project the impact of the change upon the community was privileged. The project was designed around a series of interactions intended to effect personal development and community development. These interactions have been iterative, built continually from the subsequent review processes. Thus the programme as a whole has been built incrementally through a continual conversation, with the voices of the participants critical to each review process. However, the implication of this organic approach to development activity is that the research component of the project has by design been a subsidiary component, always responding to the continually restructured cycles of action and interaction. The subsequent findings will provide with a narrative to clarify how this pattern formed.

Findings - learning through experiencing

In this first section of the findings a broad overview of the action research cycles of this project are presented. In the second section, the issues and key themes emerging from the mentoring process are described in the words of the participants and mentors. The findings focus on the mentoring component of the programme, but inevitably this component is inextricably tied to and mediated by the community of practice workshops, with participant and programme development achieved through the integration of both components.

BRC mentoring - action research cycles

This narrative reconstructs the patterns of practice that have occurred over the three years, 2008 to 2011. While there was a broad intention for the programme(s) in 2007, the plan of for action and interaction was emergent and iterative. This narrative therefore is the first complete 'plan' of the first three cycles of the programme, retrospectively positioning the action and reflection cycle as an 'ordered' statement. Each paragraph that follows describes two action research cycles.

The first cycle begins with the NCVET planning process (July 2007) and the intention to build research capacity, publicising this intention, and generating a significant number of action proposals and the subsequent review those proposals. In January 2008, forty proposals were reviewed, the intentions for the programme developed, with four consortia engaged to develop the components of the programme. Meanwhile, potential candidates for the programme had also made project proposals (January 2007) that were reviewed by a national panel who selected the new researchers for the first 2008/9 scholarships. Simultaneously, the now three consortia, discussed their activity plan for the next four months which included introductory workshops and the development of mentors for each participant.

Plans for the workshop and the mentoring roles were drawn up and disseminated. In May 2008, a two-day workshop was held to rework the participant proposals, introduce research skills and develop a community of practice. Subsequently, each participant was linked with a mentor that they had chosen from the pool. The progress of the programme was reviewed through monitoring the mentors' actions, the interaction on the community of practice website, and the informal gatherings at the NCVET 'No Frills' conference in July 2008. Interaction continued between most participants and their mentors, and between the participants. Programme directors began monitoring calls and emails with participants (September 2008). Interaction between the programme directors indicated the need for greater coordination. Schedules of contact were initiated and teleconferences arranged between the directors and NCVET, between the programme mentors, between some of the participants and AVETRA senior researchers, and between the AVETRA mentor programme reference group.

A range of teleconferences took place between October 2008 and February 2009 forming a pattern that would be institutionalised and embedded. There was significant opportunity for stakeholders to vocalise what they were doing, what was working and not working, and what they thought should be done. The notes from these teleconferences were used to shape subsequent action and to codify guidelines for action. By January 2009 participants were contacted to confirm the March deadline for their project completion and to receive the

appropriate template for their final submission. Several participants prepared to present their project or findings at the 2009 AVETRA conference. Reviews of progress at this stage indicated that some participants were nearing completion and in the write up stage, others having difficulty visualising what they had to achieve, or struggling to meet completion timelines.

In February 2009 the second set of participants were selected from 32 applications. Action for the first group of participants was discussed and planning for the May workshop for the second group finalised. In April 2009 several participants presented at the annual AVETRA conference, winning the best new researcher award, and being part of the conference committee. The diversity in terms of achievement and completion of the first group was discussed and plans for the second workshop reviewed.

A two-day workshop was held in May 2009 reworking the second group of participant proposals, developing research skills and instituting a virtual community of practice. Again, each participant was subsequently linked with a mentor who received a comprehensive mentoring manual. Most projects were reviewed at the NCVET 'No Frills' conference in July 2009. Teleconferences for mentors in September and October 2009 enabled vocalisation of issues. Again, the issues from these teleconferences informed the mentor pool, and added to the guidelines for action. In November 2009 a second workshop was held at VU that also included those sponsored for VET higher degree research. The two days involved presentations, discussions on data gathering, research dilemmas and writing up, and included advice for using the NCVET template. An evaluation of the programme so far was completed for circulation.

At the start of 2010 a third group of ten participants was selected from 26 applicants. Several of the 2008/9 new researchers presented at the AVETRA conference and two further teleconferences with the mentors were held to focus the last stages of the 2009 new researchers as they assembled their papers. A two-day workshop was held at VU for the new 2010 researchers who were linked to their chosen mentors, and most of the group presented their experiences so far at the July 'No Frills' conference in Perth. Three further mentor teleconferences were planned and held for the 2010 group mentors, and the second two-day workshop was held for the 2010 new researchers at VU which again included seven of the higher degree group, where they presented their work so far and discussed options for the analysis and write up phase. The mentors rigorously followed up the 2009 group and ensured that each researcher submitted a completed research paper report to NCVET.

Stakeholders Perspectives

During these cycles of the programme, notes were made of each reflective discussion, teleconference and telephone interview with mentors and new researchers. This next section reviews the *key issues emerging from these reflective discussions* with an emphasis on those focusing on the mentoring component, specifically those that were expressed with the greatest passion and by several participants. They are illustrated with quotes where appropriate.

During the first three years of the programme the mentoring process changed significantly. The first year was marked by the opaque nature of what was to be produced and the limited guidelines about how to operationalise the mentoring activity. The first year mentors were disadvantaged by not being able to see a completed project or a desired timeline. Having a timeline enabled early warning signals to be posted. Mentors in years two and three greatly benefited from being able to access the finished products of the previous years and having a basic mentoring manual that accumulated all the learning of the first experimental year. *The mentors* were able to vocalise their issues through teleconferences that became a structural tool for the project. Three years on we have learned a lot about VET research mentoring from the multiple relationships that have been enacted.

Matching the pairing of each new researcher to a specific mentor is initiated by new researcher requests from the mentor pool presented to them, and driven by ‘existing relations and geographical proximity’, ‘self selection of mentors was the good bit....it let me take the lead’. Mentors have acknowledged the relational aspects of the matching where both parties have to agree to the relationship, ‘I think all students are mentorable.....but you could have all the technical skills..... and yet still not relate’. It was evident that where mentors had an existing relationship with a participant it was a good omen for the relationship.

Mentors needed to know early on that this was not higher degree supervision, ‘the teleconferences were good....letting us know what the aim was...making us see that for some people, hooking up with a professor at a university was rather daunting for some of them (the new researchers)’. Most mentoring pairs got together as soon as possible, but for some it was more difficult. Mentors emphasised the need for an early face-to-face meeting and the frustrations when distances prevented this – ‘we have tried - by our diaries keep missing’. Remote participants were often at a disadvantage as the pool of mentors was very capital city biased.

‘I picked up on people in more remote locations....I knew that they would be struggling.... but I was familiar with that kind of context...meeting is not immediately essential.... it was more than six months before I saw one student’.

Those who had mentored more than one participant commented on the diversity of the candidates, ‘(they have) very different needs and pathways’.

‘ There is a great variation in skills and knowledge.... is a great difference in skills....while one understood everything, the other was never going to get there. You can’t make them the same... (you can’t) assume their level...Masters students have gone through a process....you make assumptions about their (basic research) knowledge’.

‘No one size fits all....some people know exactly what they want to do and are looking for approval and supportothers are focused on an impossible project they need telling what not to do’.

Mentors discussed how important it was to set the ground rules for communication at the start.

‘Its about keeping the person and the work separate – telling them early on that you are going to be honest....keep the work comment separate to the person....you have to tell them what you think.... without crushing identity...I wanted that clear at the start’.

There was considerable congruence between the mentors when they vocalised what happened in their discussions with the participants.

‘(You need to) find out their skills early....get the schedule of meeting set and focus them on finding time to do the projectand setting deadlines...you need to be alert to spotting problems.... anticipating problems’.

Much of the interaction was carried out by email. ‘I spent a lot of time reviewingtrying to give fast feedback to what they had written’, ‘Its good to get them to write something early and to get the flow of writing and tracked changes critique as a regular pattern’. Managing the process entailed making sure that the data, ‘must be collected before Christmas break’, and fitting in with workplace cycles.

‘You need to be flexible....(we) had to change it substantially – keep your eye on the main game....get used to the experience of changing it(we had) the rug pulled out from under us (by the focal organisational for data collection)...(we had to make a) flexible response’.

‘Employer relations were important – they needed to keep in touch with the project..... to see the benefits....it has to be marketed – publicised locally to gain support’.

Mentors required early briefing on the basics of the programme so they were aware of ‘how much data was needed’, and ‘to see completed goods’, so they knew what they were aiming for. For most mentors, recognising that this was not even an honours project was important to focus on modest expectations. Most mentors agreed that getting some early writing on table helped the participants with their project – ‘he produced a simple two page lit review’. Mentors indicated that all the participants would benefit from knowing how to use tracked changes, working with templates, and Skype video for remote discussions. They also needed guidance on what conferences and abstracts to focus on. Mentor teleconferences were important for sharing the experiences and for mutual support. Mentors recognised the interrelationship between the components of the programme and wanted to be updated on the workshop activity. Mentors needed to know what had been happening at the workshops and the limits of their role.

‘The workshops are part of the experience – I could not have done what I did without them....they need the support and network of the rest of the group’.

The voices of *the new researchers* echoed similar themes to those of the mentors. Perhaps the most important lesson to be learned was that being a researcher was being committed to finding time and making deadlines, the perennial researcher’s battle between project progress and their day-to-day job - ‘I just need more release time for my job to get things really progressing’ – ‘quite a struggle.... have to get back to it’ – ‘a year of living dangerously...need to focus questions’. There was naturally considerable initial fear about what they had taken on, which was gradually replaced by the fear of decision-making as the project hit unexpected dilemmas – ‘I’m realising that research is never undertaken in a vacuum’ – ‘I need to focus down – cut with a sword (to make it manageable)’ – ‘I’ve had a great day today pulling together my research question and....starting to write’!

Mentor support was critical to their motivation – ‘her feedback, guidance and her ability to drive me to do my best is just incredible’ – ‘he is excellent....and really is a fabulous source of information’. The first group were unclear about what they had to achieve for their scholarship and only focused on the write up phase when the data had been collected – ‘so far

I feel I haven't done very much that is tangible (writing that is), but at the same time I feel that I have been learning much' – 'my original plan is just not going to happen (I'm) adapting to a much smaller sample'. The lack of a clear timetable meant that some participants hit the Christmas break without data and found their project set back by a two months – '... I am tracking a particular group....who have now left' – ' (my) industry partner not on the same timeframe as me....'.

The third year of participants, benefiting from a more coherent mentoring programme and an additional CoP workshop were more pragmatic in their reflections of the experience. First they emphasised the need to 'get started as quickly as possible...get the relations going'. They discussed how they worked with their mentors to get the 'clear purpose needed' to progress their project'. These discussions with their mentors 'confirmed direction...but changed questions', 'my mentor planned and sorted out the project for me. Sometimes this was done face-to-face, but also through teleconferences and using those free video conferencing resources'.

The development of technical skills was made by exploring what skills were already in place and then by continued reviewing of plans and written work, 'my mentor got the lit. review going backwards and forwards between us and now it is in its fourth review'. Discussions about the data collection process threw up alternative strategies – 'my mentor was amazing in pointing out I could not do the interviews (with my own staff), and then doing them for me'; 'we discussed the use of survey monkey and the lack of social interaction (we noted) then added the interview schedule'.

Discussions during the projects raised issues beyond the technical with mentors, 'reminding me of the politics involved....and who should be included'; 'we talked through the ethical issues involved....it was an education in itself'. The interactions were both developmental and personally supportive, 'he always gave me so much to think about....fills me with questions', 'I go away with my head full....most significant change', 'it's the mastery....he put me in touch with a similar project in another field'.

For those involved in directing the programme it became evident that looking after your own part of the program led to a lack of coordination across the programme. All stakeholders needed to know what was going on and what was expected. In addition, all too often employers became not just sleeping but obstructive partners and needed to be reminded about the commitments they had made to support their new researchers. Where time became an issue for participants, employers had to be reminded of their supporting role. The second and third year benefited from having an existing and experienced mentor pool for matching

purposes and action being taken where mentoring relationships did not flourish. The issue of ethics became part of the mentoring relationship in the second year – ‘(as it is) an important part of their development as researchers’. While the initial workshop set up the exploration of researching it became evident that having collected data the analysis and writing up required a further workshop. It also drew a line in the sand and made participants present to their colleagues.

Discussion of learning so far

What has this project told us about research mentoring for new VET researchers? This section will respond to the research questions, review how the emerging model measures up to existing theory and comment on key messages for stakeholders.

In terms of RQ1: *what actions supported new researcher development* ? The development of the programme infrastructure with teleconference for mentors, a detailed mentoring manual with a draft timetable and final report examples, and a second workshop for participants indicate how it has been the synergy of mentoring and community of practice workshops that has supported new researcher development. Equally important has been the establishment of effective mentoring relationships through self-selection of mentors by participants, the early establishment of mentoring climate, and the continual exchange of written drafts. In most cases a critical feature for mentors schooled in higher degree research supervision has been the ‘unlearning’ of the goals and practices of such activity and the re-modelling of their skills and knowledge around this new and different group of researchers.

In terms of RQ2: *what has been the impact of these actions*? The impact of the first year has been primarily in establishing a framework and a pathway where non existed. The teleconferences have shaped mentor confidence to manage the relationships focusing on the work rather than the person, being flexible when issues arose, and ensuring that the researchers were stimulated by the exchange of draft materials. Having examples of completed studies enabled mentors to focus their participants on reachable visible goals as they had a precise idea about what was expected and how it different from a higher degree thesis. The second workshops supported this by calling participants to account, as they had to vocalise their progress and dilemmas to each other.

Finally, in terms of RQ3: *what can be learned from this activity*? Building structure that ensures both individual support and group support has been vital. New researchers need collaborative support in a very new world, but, being a very disparate and diverse group need

the flexibility that an individual mentor can bring to the situation. New researchers left in isolation just atrophy and wither. There is a need for mentors to set the scene sharply at the start with a focus on the end goal. Investment in creating new researcher pathways produces both research products and increases the capacity of the sector. The changes in the programme indicate how learning from experiences can lead to improvements, and in this case how more effective support and direction can achieve more successful participants completions.

How does the pattern formed by this initiative stack up *against existing theory*? Cooke (2005) indicated guidelines for the construction of practitioner research capacity. This programme development supports the components of her generic model. The workshops and mentoring have built an infrastructure that is pursuing the simultaneous development of skills and confidence through partnerships, and through real projects that are close to the field of practice. The year-long cycle has provided a learning continuity, with the goal of disseminating of findings to the VET community. The key relationships of the emerging model, based upon Cooke's earlier statement can be modelled as follows.

Insert Figure 2 here.

There are multiple implications for stakeholders that can be reduced to those with the greatest utility and impact on building research capacity. Mentors need to sweep away higher degree models and focus on the action of doing a modest local project with continual encouragement. They need to focus their new researchers on the timetable and outcomes from the start of their projects. For participants completion is all, in terms of their development, achievement and visibility in the VET community. Those coordinating the programme need to ensure there is as much liaison between themselves as there is with the participants, to enable early intervention as a year passes very quickly.

Interim conclusion- three years on

Following a positive evaluation by NCVET the programme is now in its second phase with another three years of funding for building research capacity. This is an opportune time to reflect on what has been gained and what lessons about research mentoring can be learned and carried forward, both for this programme and for the similar ventures in related research fields. This section details separate yet related conclusions *at three levels* focusing on the mentoring relations, building research capacity, and the use of action research methodology.

In terms of *mentoring* there has been a significant advance from a blank canvas. We have established VET new researcher mentoring as a legitimate obligation within the research community, generating a pool of mentors and a growing group of experienced mentors. The benefits of engagement have been strongly vocalised by mentors and their guidelines collated into a manual. Mentoring new researchers is an agenda item and a cultural component of the VET community. This will be extended not just by the continuance of the programme but also through the establishment of a website that will accumulate and distribute advice and support to new VET researchers, funded by NCVER and AVETRA. It is essential that the infrastructure that has been generated in maintained and developed.

In terms of *building research capacity* there has been visible success with project publications and presentations indicating the arrival of new researchers in the field, and the generation a range of new researcher and mentoring resources for the future. The VET research community now has a standing agenda item, building new researchers, and recognises what has to be done to sustain the community. A pathway for new researchers has been established that can act as a bridge for reflective VET practitioners who want to move beyond managing and improving their immediate relational responsibilities. It is a pathway that legitimises their presence in the VET research community, indicating and placing a value on their role. A supportive environment enables participants to resist being overwhelmed as they take their projects into unknown research territory. The cultural footprint of a new researcher pathway and mentoring has been established within the community, together with the concept of gathering our learning and facilitating the transfer of knowledge from experienced to novice researchers. In each VET institution supporting a participant, the profile of research activity has been raised. Coordination between NCVER, AVETRA, VU and senior researchers has realigned relations around a collaborative objective. In short, the collaborative relations and infrastructure that has been created provides a blue-print for other research communities wishing to invest in their own future.

In terms of *research*, this study also has the benefit of placing an action research project at the heart of the VET research community, emphasising the legitimacy, the benefits and the challenging nature of action research as a research strategy. From one perspective a few people have thrown together a programme and worked with it to get the structure right. From another perspective more than 300 years of VET research experience has been distilled into the relations of the past three years to make it work. I am reminded of a quote attributed to Picasso, who after doodling while he was interviewed, was questioned about the morality of his two minute pencil marks now being now worth thousands of dollars. He responded that they were not the result of a few minutes work, but fifty years of study in his field. The VET

research community has built significant structures in Australia over the past twenty years. Now, those experiences are being distilled and distributed for the next generation. This paper is just another stage in the action research cycle of this project, but an important document, as it makes a very visible and public reflection on what has been happening.

Sometimes it is time to step back review the progress so far, recognising the structural fragility of what we have made. Rather like climbing a mountain, such action will take us into territory where we have never ventured before. As researchers we are used to watching others trial initiatives and listening to their perceptions. In this project we were both researchers and participants, co-constructing the architecture as we progressed and gaining understanding. While these words on the page convey some of that learning, the most pleasurable aspect of this project, and of my VET research career, has been watching real people become VET researchers and join our community.

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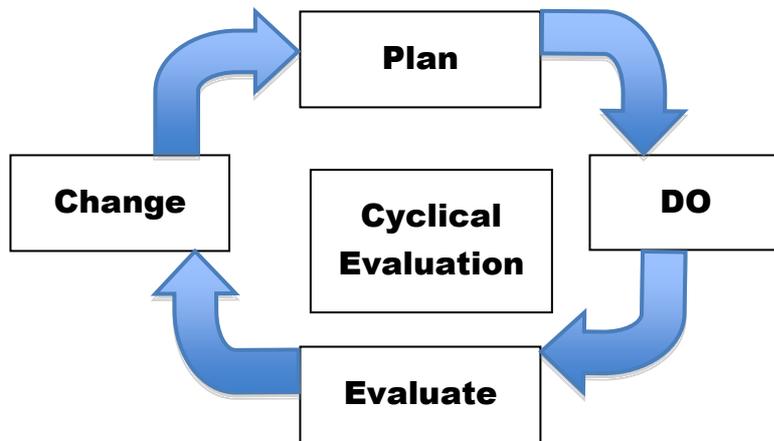


Figure 1: The action research cycle

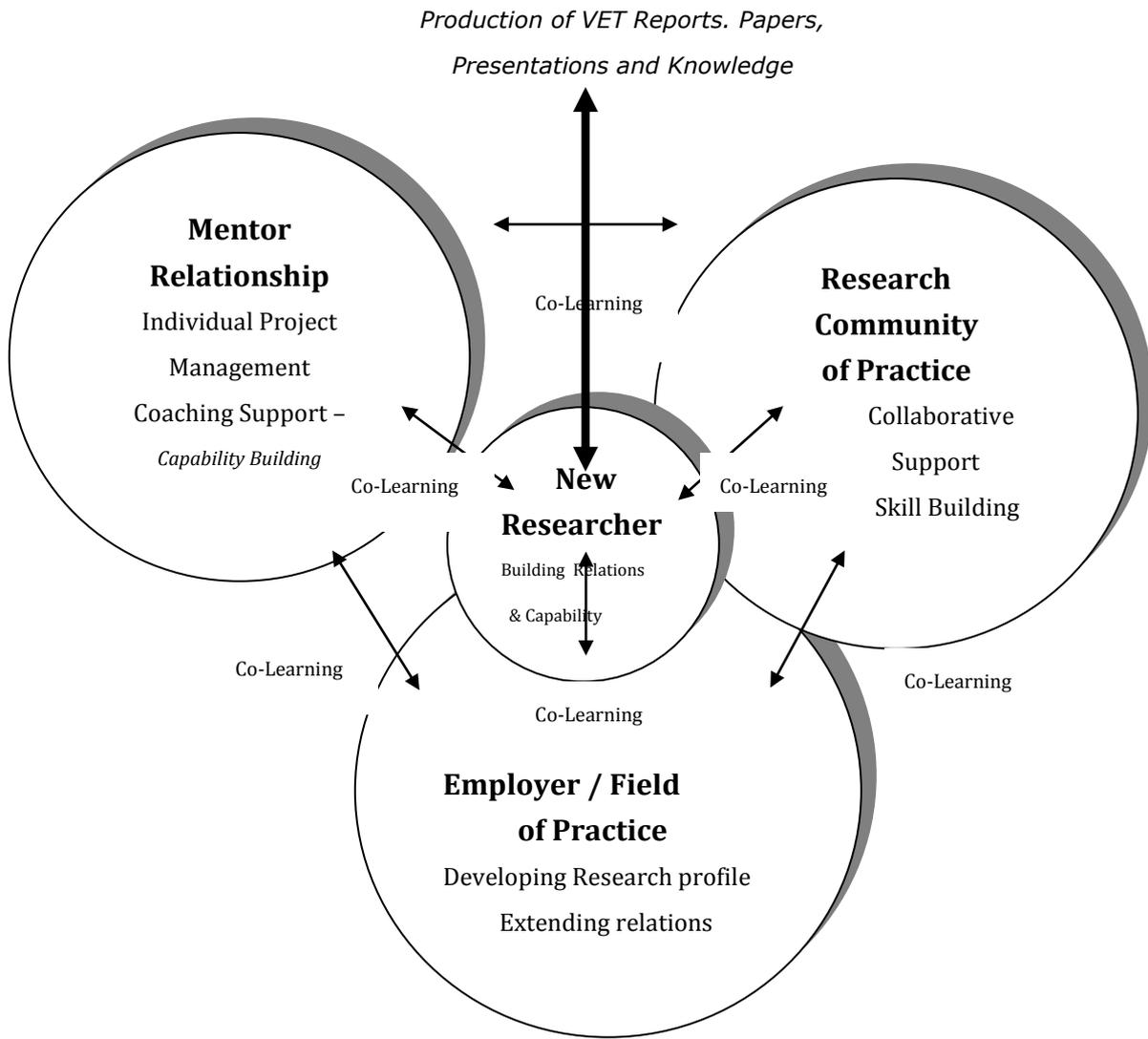


Figure 2: Seminar relations for developing Research Capacity – Development from Cooke (2005)